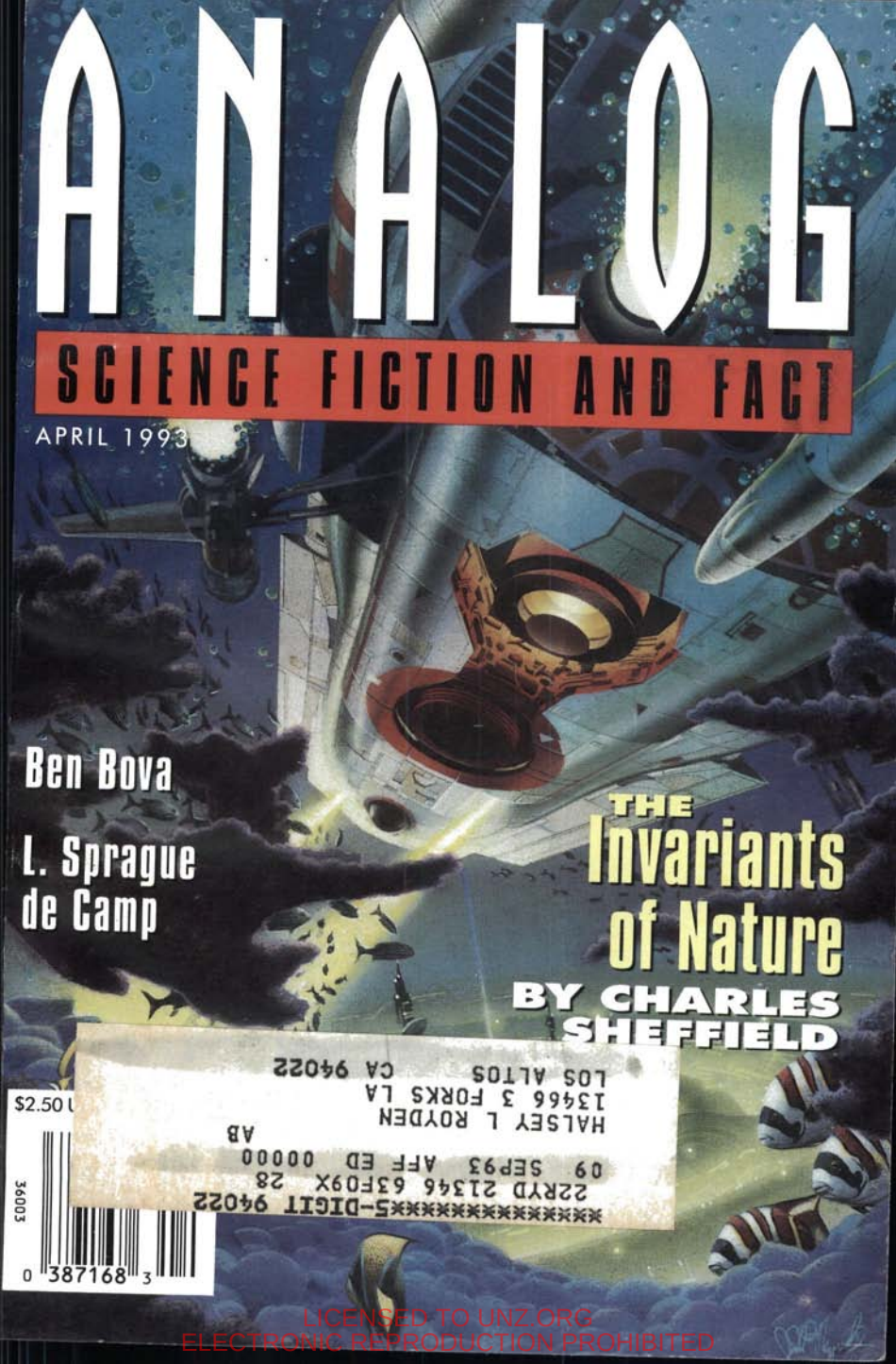
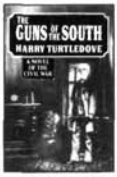


LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"LOOK AT THE WORLDS A HUMAN CAN EXPLORE FOR JUST $1!"

8201* $11.98x

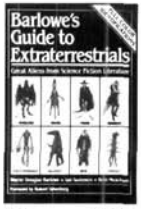
8466* $27.95/**$14.98**



8235 $19.00/**$9.98**

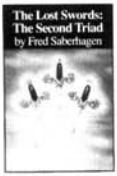
8425 $21.95/**$8.98**

7294 **$7.98x**



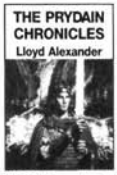
6916 **$12.98x**

7260 *Woundhealer's Story, Sightblinder's Story, Stonecutter's Story* $45.85#/**$12.98**



5017 *Farslayer's Story, Coinspinner's Story, Mindsword's Story* $50.85#/**$13.98**

4747 *So You Want to Be a Wizard, Deep Wizardry, High Wizardry* $45.85#/**$12.98**



5595 All 5 novels plus *The Foundling & Other Stories* $83.70#/**$14.98**

7609* *The Book of the Damned, The Book of the Beast* $39.90#/**$10.98**

8508 *Knight of Ghosts and Shadows, Summoned to Journey* **$12.98x**

HERE'S WHAT YOU GET WHEN YOU JOIN...

A GUARANTEE OF SATISFACTION. Once your membership's accepted, we'll send the 5 BOOKS you've chosen. If you're not 100% satisfied with them, return the books within 10 days *at our expense.* Membership will be canceled and you'll owe nothing.

HUGE DISCOUNTS ON HARDCOVER BOOKS. Save as much as 65% off publishers' hardcover edition prices. Club books are sometimes altered in size to fit special presses.

THE FREE CLUB MAGAZINE. You'll receive up to 16 issues a year. Each issue reviews the Featured Book Selection(s) plus a wide variety of alternate books from the Club's extensive library.

SHOPPING MADE SIMPLE. To get the Featured Book Selection(s), *do nothing*—it will be sent automatically. If you prefer another book—or none at all—simply return your Member Reply Form by the specified date. A shipping and handling charge (and sales tax, where applicable) is added to each order.

AN EASY-TO-MEET OBLIGATION. Take up to 2 years to buy 4 more books at regular low Club prices. Afterwards, you may resign membership any time.

RISK-FREE RETURN PRIVILEGES. If you get an unwanted book because your Club magazine was delayed and you had less than 10 days to respond, simply return the book *at our expense.*

Prices in fine print are publishers' hardcover editions.
Prices in bold print are Club hardcover editions.
* Explicit scenes and/or language
x Hardcover edition exclusively for Club members
Combined publishers' editions

+ ™ and © 1992 Lucasfilm Ltd. All Rights Reserved. Used Under Authorization.
++ Copyright © 1992 Paramount Pictures. All Rights Reserved. STAR TREK is a Registered Trademark of Paramount Pictures.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

8433 $22.00/**$10.98**

1271++ $20.00/**$9.98**

8763+ $18.50/**$7.98**

7989 **$10.98x**

6429 $22.50/**$7.98**

8516* $22.00/**$11.98**

4994 **$7.98x**

2667 $16.95/**$10.98**

6577 $20.00/**$8.98**

8169* $21.95/**$10.98**

1289 $18.95/**$8.98**

7302 $20.00/**$6.98**

5660 *Orc's Opal, Mouvar's Magic* $37.90/**$12.98**

5652 *Dragon's Gold, Serpent's Silver, Chimera's Copper* **$14.98x**

8243 $21.95 **$10.98**

6437 $22.95/**$11.98**

6569 $22.00/**$10.98**

1347 $21.95/**$10.98**

Choose any 5 books for $1 with membership

THE Science Fiction BOOK CLUB®

MAIL TO: *The Science Fiction Book Club*
6550 East 30th Street, P.O. Box 6367
Indianapolis, IN 46206-6367

Please write book numbers here:

YES! Please enroll me in *The Science Fiction Book Club* according to the risk-free membership plan described in this ad. Send me the 5 BOOKS I've indicated. Bill me just $1, plus shipping and handling.

SAVE MORE—BUY YOUR FIRST BOOK NOW FOR $2.98
☐ Send me the book I've indicated and reduce my commitment to only 3 more books. Bill me an additional $2.98, plus shipping and handling.

(write book number)

38023 33

Mr./Mrs.
Miss/Ms. _____
(please print)

Address _____ Apt. _____

City _____ State _____ Zip _____

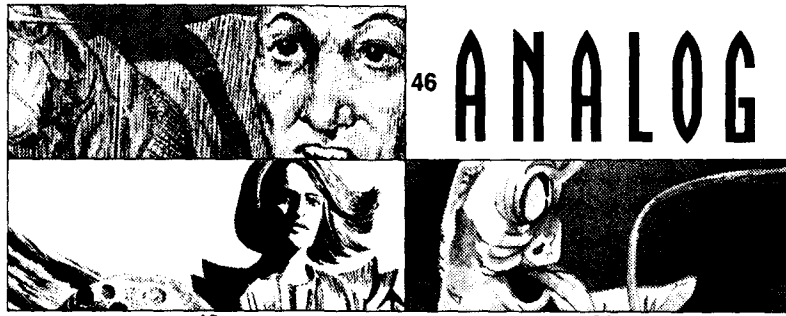
38024 31

If you're under 18, your parent must sign here _____

Members accepted in U.S.A. and Canada only. Canadian members serviced from Canada, where offer is slightly different. Sales tax added where applicable. We reserve the right to reject any application.

ANA 4/93

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



46 ANALOG

12 86

Vol. CXIII No. 5
April 1993

Next Issue on Sale
March 30, 1993

Serial
SQUATTER'S RIGHTS, (Conclusion) Maya Kaathryn Bohnhoff ____ **114**

Novelettes
THE INVARIANTS OF NATURE, Charles Sheffield ____ **12**
SPOILED ROTTEN, Grey Rollins ____ **86**

Science Fact
GOAT ISLAND, L. Sprague de Camp ____ **62**

Short Stories
HIT AND RUN, Jerry Oltion ____ **46**
CONSPIRACY THEORY, Ben Bova ____ **80**

Poem
THE FASHION OF PHYSICS, Marianne J. Dyson ____ **107**

Reader's Departments
THE EDITOR'S PAGE ____ **4**
THE ALTERNATE VIEW, John G. Cramer ____ **108**
THE REFERENCE LIBRARY, Tom Easton ____ **160**
IN TIMES TO COME ____ **167**
BRASS TACKS ____ **168**
UPCOMING EVENTS, Anthony Lewis ____ **176**

Cover by John Maggard

Christoph Haas-Heye
President and Publisher

Stanley Schmidt
Editor

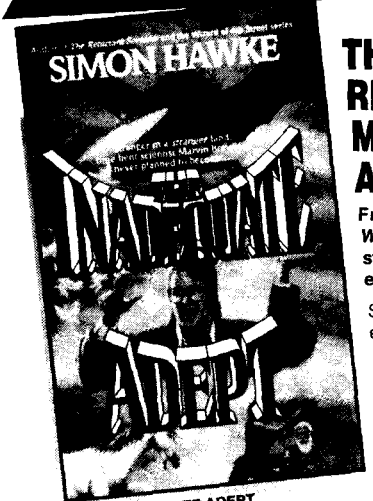
Tina Lee
Managing Editor

Terri Czeczko
Art Director

Indicia on page 5

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

news from Questar SCIENCE FICTION/FANTASY



THE INADEQUATE ADEPT
by Simon Hawke
Cover art by David Mattingly
0-446-36246-8/$4.99 (In Canada: $5.99)

THE RELUCTANT SORCERER RETURNS—IN HIS SECOND MAGICAL, TIME-TRAVELING ADVENTURE!

From the author of the bestselling *Time Wars* and *Wizard* series comes book two in the hilarious new saga starring Marvin Brewster, reluctant sorcerer, time traveler, and stranger in a *stranger* land!

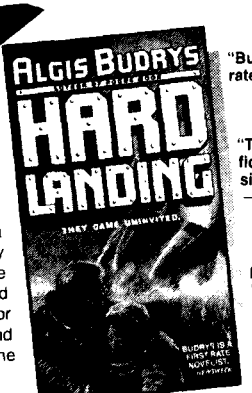
Stranded in a universe of gossiping dragons, walking bushes, capitalist leprechauns, talking chamberpots, and Organized Magic, all Dr. Brewster wants to do is find his time machine and go home. But the machine has been captured by the evil wizard Warrick, who wants its secrets for his own vile means. Can Brewster recover his time machine in time to rescue this parallel world's occupants from Warrick's insidious clutches?

Also read: *THE RELUCTANT SORCERER*
0-446-36260-3/$4.99 (In Canada: $5.99)

ALSO THIS MONTH:

From one of sf's leading masters, the author of *Rogue Moon* and *Michaelmas*, comes a provocative, intriguing tale of four stranded aliens and their desperate struggle for survival in a harsh, primitive society...ours.

They crash-land on Earth with nothing more than a first aid kit and their own instincts to guide them. They slowly blend their way into a society they find at once brutal, accepting, abusive, and opportunistic. And when one of their own trades technological secrets for personal gain, he risks blowing all their covers—and sets in motion a chain of events that may alter the course of history.



"Budrys is a first-rate novelist."
— NEWSWEEK

"The best science fiction author since H.G. Wells."
— KINGSLEY AMIS

HARD LANDING
by Algis Budrys
0-446-36235-2
$4.99 (In Canada: $5.99)

AVAILABLE AT BOOKSTORES EVERYWHERE

A Time Warner Company Questar is a registered trademark of Warner Books Inc ©1992 Warner Books Inc

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

EDITORIAL Stanley Schmidt

A SECOND CHANCE

Some stories are fun to write. Some exist only because a writer had to get them out of his system.

For me, a good example of the latter was "The Unreachable Stars," which I wrote in 1970 and which John W. Campbell published in these pages in April 1971. He got it into print faster than any other story I ever sold—almost certainly because he, too, feared it might be prophetic unless people changed their thinking.

In those days the Apollo program was in full swing, doing things that most people had thought impossible even when I was growing up. A year earlier the first humans had set foot on another world. To many of us it seemed quite obvious that that should be the beginning of the beginning of something huge and exhilarating and terribly important: the spreading of humankind from its planetary cradle through the rest of the Solar System, the Galaxy, the Universe. But even then there were ominous hints that many others saw it not as a beginning, but as an end.

The space program was under attack from many quarters then. It was a period of intense social unrest, and many people wanted the space program's funding diverted to social welfare programs. As some of them put it with colossally ironic inaccuracy, they wanted the money spent on Earth, not in space. (Did they think bags of cash were being launched into orbit?) Even scientists in other fields wanted space spending reduced, hoping that some of its funding would find its way to *their* pet projects. Space could wait, its various opponents claimed; let's solve our immediate problems first.

"The Unreachable Stars" was a cautionary tale about a huge danger I saw in such thinking. It depicted a future in which space exploration *had* been abandoned in favor of social programs—and people continued to breed and use Earth's resources until all the technology they could still muster was used to maintain a miserable, subsistence-level existence. They needed the benefits space could bring, more desperately than any generation before them; but they no longer had the option of going after

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

them. Their ancestors had painted them into a corner, squandering what they needed on short-sighted solutions to "immediate problems." The story was set a thousand years in the future, but we were the villains.

John Campbell and I found it all too easy to believe that what we were seeing around us was the beginning of that process. Even if "solving all our immediate problems first" were a realistic goal (which it wasn't and isn't), nobody seemed to realize it wasn't necessarily true that "space could wait." If we didn't do it while we could, we—or our descendants—might never have another chance.

For the next couple of decades, that threat looked ever more real. Less than two years after "The Unreachable Stars" was published, I watched at close range, with many other science fiction writers and artists, the night launch of *Apollo 17*, the last manned flight to the Moon. It was one of the two most spectacular events I have ever witnessed (appropriately, one manmade and the other natural), and made even more so by what it should have signified historically.

But it didn't. The opponents of manned spaceflight got at least some of what they wanted. *Apollo,* which should have been a dramatic beginning, became a dead end, a historical curiosity in which vast sums of money had been spent to achieve little more than a colossal publicity stunt. There was no intrinsic reason why it shouldn't have been much more than that, but the nation largely turned its back on what it had accomplished so far. Instead of building on the space capabilities it had developed, it let them atrophy. Today, we are often reminded, we couldn't return to the Moon if we wanted to.

But today there is a new restlessness in the land. Various groups are pushing to get America into space again. Probably the one you've heard the most about is the Space Exploration Initiative (see Doug Beason's "America's Blueprint for Mars: the Report of the Synthesis Group" [Mid-December 1992]) a plan calling for the return of American pioneers to the Moon and then onward to Mars. The Space Exploration Initiative already exists, on paper, but it was put forth by a president who may or may not still be in office when you read this. It won't become reality unless the specific projects that compose it

Analog Science Fiction and Fact (Astounding) is published every 28 days which includes special issues in January and July by Dell Magazines, a division of Bantam Doubleday Dell Magazines, at $2 50 a copy in U.S.A., $3.25 in Canada. 1 year subscription for $34.95 in the U.S.A. and possessions, in all other countries, $40.50 (GST included in Canada, GST #123054108) payable in advance in U.S. funds. First copy of new subscription will be mailed within eight weeks of receipt of order. When reporting change of address allow 6 to 8 weeks and give new address as well as the old address as it appears on the last label. Second-class postage paid at New York, NY, and at additional mailing office. Canadian 3rd class postage paid at Windsor, Ontario. © 1993 by Bantam Doubleday Dell Magazines, all rights reserved. Protection secured under the Universal Copyright Convention. Reproduction or use of editorial or pictorial content in any manner without express permission is prohibited. All stories in this magazine are fiction. No actual persons are designated by name or character. Any similarity is coincidental. Printed in U.S.A. All submissions must be accompanied by stamped self-addressed envelope, the publisher assumes no responsibility for unsolicited manuscripts or artwork.

POSTMASTER: Send to ANALOG SCIENCE FICTION AND FACT (ASTOUNDING)
P.O. BOX 7061, Red Oak, IA 51591.
IN CANADA RETURN TO 3255 WYANDOTTE STREET EAST, WINDSOR, ONT. CANADA N8Y 1E9
Editorial and Advertising: Analog Science Fiction and Fact, 380 Lexington Avenue, New York, NY 10168-0035
Subscriptions: Analog Science Fiction and Fact, P.O. Box 7061, Red Oak, IA 51591.ISSN 1059-2113

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

receive full support, financial and otherwise. As I write this, before the election, that support appears doubtful; sources inside the aerospace industry tell me unsettling tales of massive ongoing cutbacks. When you read this, after the election, crucial decisions will be imminent, and they will depend on a largely new government. Even those who are reelected or reappointed will likely feel that "times have changed" and look toward new directions.

If you want the Space Exploration Initiative (SEI) to happen, *you* will need to make sure your representatives in Washington know that. Elsewhere in this issue (page 113) you'll find a copy of a petition prepared by the National Space Society to make it easy for you and others of like mind to do so. If you agree with what it says, you should seriously consider circulating it and returning it to the address indicated. If you don't want to cut up your magazine, feel free to photocopy that page, as often as you like.

Not everyone is satisfied with the Space Exploration Initiative, of course. There is, for example, an organization calling itself the American Space Council, with the fine-sounding motto, "Creating a spacefaring civilization in our lifetime," and offering its own program called "Luna 2010: A Space Colonization Initiative." If you read no farther than that, it sounds good; and in fact the ASC's literature raises some disturbing questions that need to be addressed. It claims that popular support for space in general,

STANLEY SCHMIDT ..... Editor
TINA LEE ..... Managing Editor
IAN RANDAL STROCK ..... Associate Editor
SCOTT L. TOWNER ..... Assistant Editor
JEAN TRAINA ..... Design Director
TERRI CZECZKO ..... Art Director
ANTHONY BARI ..... Junior Designer
MARILYN ROBERTS . Senior Production Manager
CAROLE DIXON ..... Production Manager
CYNTHIA MANSON ..... Director of Marketing and Subsidiary Rights
CONSTANCE SCARBOROUGH ..... Contracts Manager
BARBARA PARROTT ..... Director of Newsstand Circulation
BRUCE SCHWARTZ ..... Director of Circulation Subscription Sales
DENNIS JONES ..... Operations Manager Subscription Sales
DAVID MENDELSON . Renewal & Billing Manager Subscription Sales
FRED SABLOFF ..... Advertising Sales Director
JUDY DORMAN ..... Advertising and Classified Advertising Coordinator

Published since 1930

CHRISTOPH HAAS-HEYE
President and Publisher
Dell Magazines

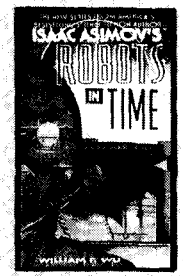
JACK HOEFT
President and CEO
Bantam Doubleday Dell Publishing Group, Inc.

ADVERTISING OFFICES
NEW YORK
(212) 856-6306

ADVERTISING REPRESENTATIVE
Dresner Direct, Inc., N.Y., N.Y.
(212) 889-1078

First issue of *Astounding*
January 1930 ©

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



ISAAC ASIMOV'S ROBOTS IN TIME: *Predator* by William F. Wu

A dazzling new series based on the perennial favorite setting of Asimov's robot universe. Book One involves an awe-inspiring chase through time for a renegade robot.

STAR REQUIEM 3: *Warlord of Heaven* by Adrian Cole

The third volume in a new fantasy adventure series by the author of the Omaran Saga.

"Cole has a magic touch." — Roger Zelazny

THE DEVIL YOU SAY by Elisa DeCarlo

A delightful romp through 1930's London involving a psychic detective, satanists on the loose, a beautiful girl who's turned into a Ming vase and the unflappable psychic valet, Hornchurch.

BEGGARS IN SPAIN by Nancy Kress

Two-time Nebula Award winner Kress presents a powerful and thought-provoking novel, a milestone in her already formidable writing career. **"[Kress possesses] a depth of imagination unusual even among SF writers."** — *Analog*

COMING IN APRIL 1993

An Avonova Book/William Morrow Hardcover

AVONOVA

AVON BOOKS
The Hearst Corporation

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and SEI in particular, is weak because people want a space program that will "put lots of people into space in their lifetime" and the SEI does not have that as an explicit goal. The ASC believes SEI, with its emphasis on exploration, will not "sell." The program they would rather see is aimed very specifically at permanent colonization and exploitation of the Moon, *soon*—and in a way that will be open to "homesteaders," not just government employees.

All of that may sound very appealing, at least until you look at some of the specifics of the ASC proposal. At that point you may begin to feel uncomfortable; words such as "extreme" may enter your head. The Luna 2010 Initiative proposes, for example, that the United States should claim the northern hemisphere of the Moon as its own territory, and develop it with the intention of making it the 51st state.

To me, this sounds uncomfortably like a return to 19th-century imperialism. The idea that a nation can lay a legitimate claim to a huge expanse of land simply by saying "It's mine!" does not sit well with me. And it *is* a huge quantity of land. Most people probably don't have much feel for how big "the northern hemisphere of the Moon is," but it's very close to *twice* the present *total* area of the United States (and *more* than twice the total area excluding the Great Lakes). The Luna 2010 literature says to the rest of the world, "America will leave you one-half of the Moon." Very generous, for a country that now occupies about 2% of this planet. I could hardly blame anyone else who took serious issue with such an arrogant claim—and just how do you think such a dispute would be resolved?

It's even more complicated than that, for reasons that I won't go into here. Duncan Lunan has pointed out elsewhere that, for reasons of orbital mechanics, if the United States were to claim what ASC wants, and strictly defend that claim, it could effectively bar everyone else from useful access to *any* of the Moon and the orbital space around it. Needless to say, people in other parts of the world are not happy with that.

Like the ASC, I would like to see colonization and use of the Moon begin soon; and I recognize that the "Moon Treaty," which describes lunar resources as "the common heritage of mankind," would make it somewhat difficult to develop them in the ways we are accustomed to. (Last I heard, the United States had not actually signed that treaty. However, many other nations did, and the United States did sign the Outer Space Treaty of 1967, which incorporated similar, though weaker, principles.) But I can't embrace the way the ASC proposes to deal with that problem. I simply don't want to be part of a massive land grab that thumbs its nose at the rest of the world. I would rather see new mechanisms developed to open up the Moon and its benefits to *lots* of people, not just Americans.

I have indirect evidence that many others have similar reservations. The ASC's program was officially an-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

SKYBOWL

DRAGON STAR: BOOK III

By Melanie Rawn

In the culminating volume of the acclaimed *Dragon Star* trilogy, Pol and his cousin Andry, Lord of the Sunrunners of Goddess Keep, are forced into an uneasy alliance. For only if they can overcome their longtime rivalry and suspicions of one another and draw upon their combined powers of Sunrunning and Sorcery, do they stand any chance of defeating the invaders who have sworn to destroy the people of the Desert—down to the last newborn child....

A DAW Hardcover $22.00 0-88677-541-8

And now in paperback, Book II in this spellbinding trilogy—

THE DRAGON TOKEN

"One of the most appealing worlds of recent fantasy."—*VOYA*

"A strong portrait of a world where magic and war are strongly entwined."—*The Bookwatch*

$5.99 0-88677-542-6

DAW Books, Inc.
Publishers of Science Fiction, Fantasy and Horror Since 1971
Penguin USA

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

nounced on July 4, 1992, in an "Issue Paper" whose last page, headed "How to promote Luna 2010," described several measures people who wanted to do so could take. One of them was to write a letter of support to me at *Analog*. As I write this, in late September, I have yet to receive any such letters. I find that encouraging. The problems ASC sees with SEI and the existing popular support for space programs need to be addressed, but this isn't the way to do it. We need to look for ways to solve the problems ASC points out, without substituting the ones ASC would create.

Meanwhile, we need to do *something*. I can't get "The Unreachable Stars" out of my mind, especially when I see official thumbs twiddling in a time of still-growing population and dwindling terrestrial resources. The SEI may well be the best way now at our disposal to be sure we don't paint ourselves into that corner. If it's not perfect, it can be improved as it evolves—but if it's going to get started, under a largely new government, it needs support. So think about that petition.

Opportunity may not only knock once, but we can't count on it to keep knocking indefinitely. And if we *do* box ourselves in, we can't count on posterity to get us out. ■

Do not be too timid and squeamish about your actions. All life is an experiment.

Ralph Waldo Emerson

You do not lead people by hitting them over the head—that's assault, not leadership.

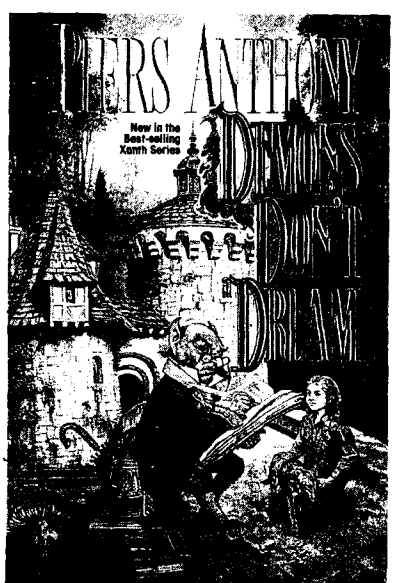
Dwight D. Eisenhower

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

NEW XANTH NOVEL

DEMONS DON'T DREAM
Piers Anthony

The newest installment in the Xanth series—one of the bestselling fantasy series of all time from one of the genre's most popular authors!

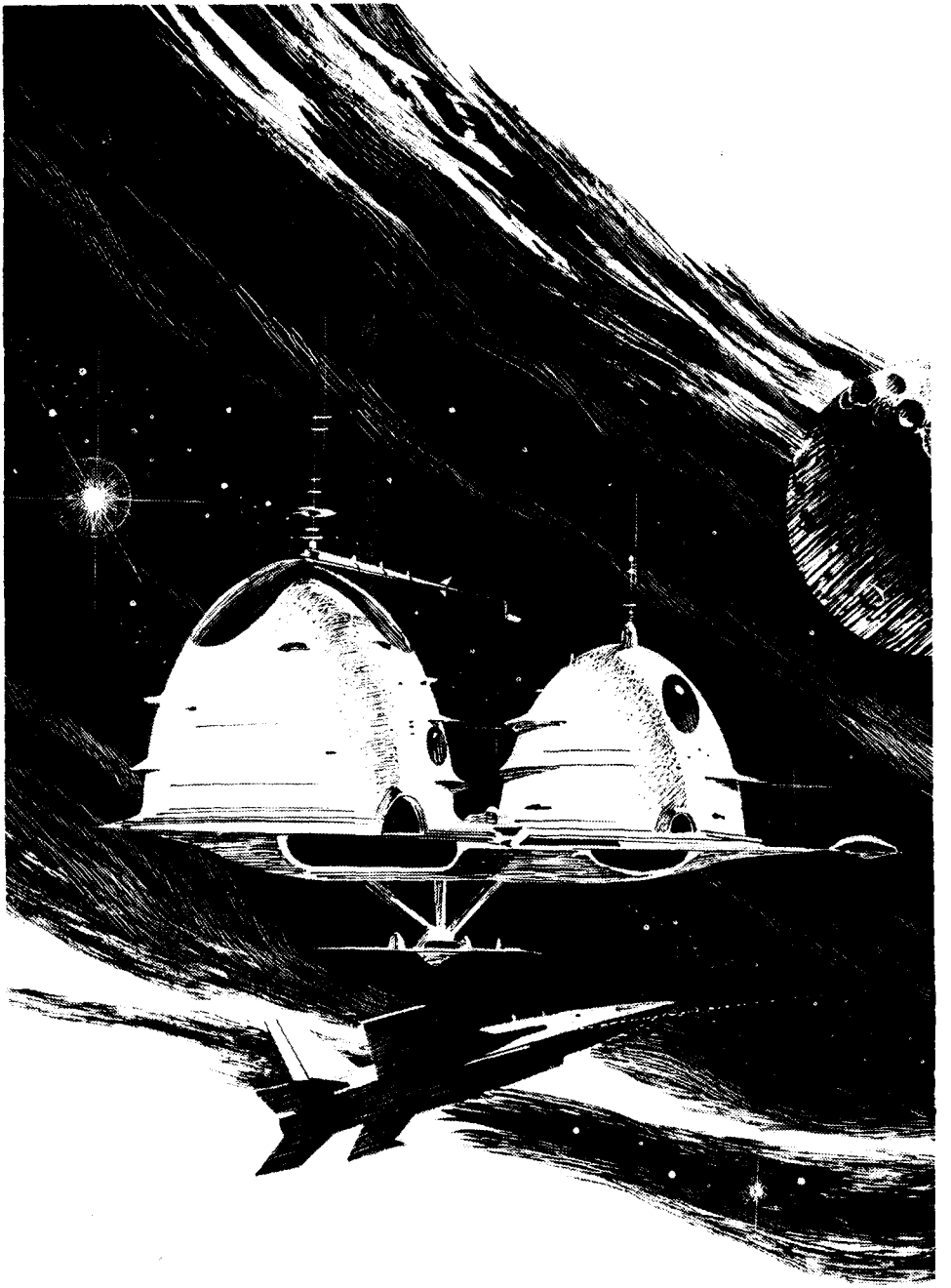


"Piers Anthony is one of the authors who can perform magic with the ordinary... he makes a book more than words to read... he is a craftsman."
—A Reader's Guide to Science Fiction

AVAILABLE IN JANUARY IN HARDCOVER
Don't delay the magic...
Don't delay the wonder...

DEMONS DON'T DREAM
from Tor Books
0-312-85389-0 • $19.95

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Charles Sheffield

THE INVARIANTS OF NATURE

Sometimes there is truth in advertising, but of a misleading sort....

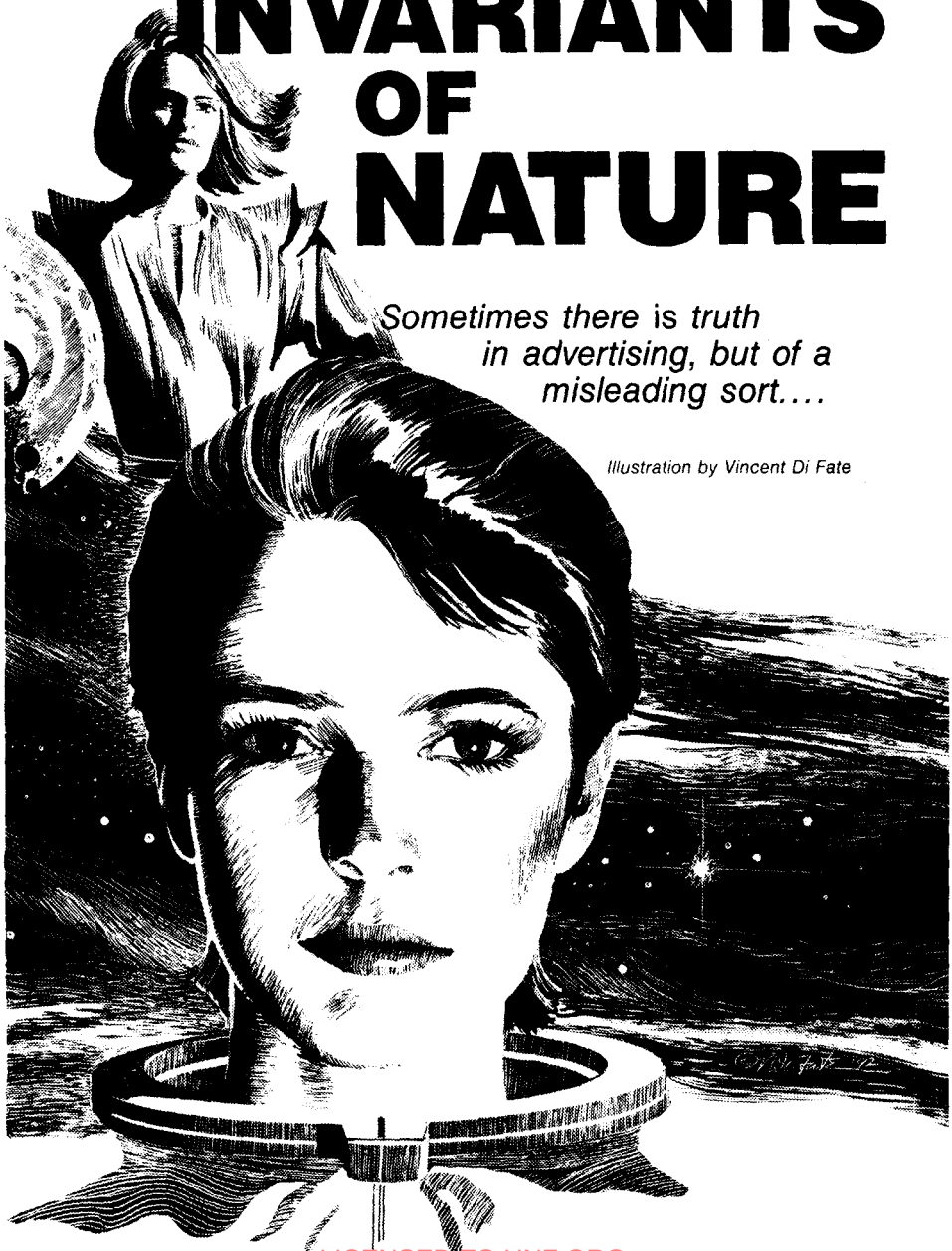


Illustration by Vincent Di Fate

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"I must say it was a surprise to me that you came here at all," Van Lyle said pleasantly. "You really have to hand it to the director. Anna Griss predicted all of this, you know—the effect of the announcement, McAndrew's arrival, and then yours. Very perceptive of her. But, then, isn't that exactly why she has the job of administrator, and we do not?"

He was standing in front of a huge pair of metal doors, checking a set of dials built into the frame. On the other side of them lay the processing vats, where all organic tissues—muscles, bones, nails, skin and hair—were dissolved to basic biotic molecules. Warning signals were splashed all over the chamber, and on both the doors: CONTROLLED ACCESS—DANGER, CORROSIVE GASES AND LIQUIDS—DO NOT PROCEED WITHOUT PROTECTIVE SUITS—OFFICIAL DEPARTMENT REPRESENTATIVES ONLY PERMITTED BEYOND THIS POINT.

Van Lyle turned to me questioningly. "Impressive, wouldn't you say? Don't be coy, Captain. I'd really like to hear your opinions on all this."

I rolled my eyes at him. I was sitting upright in a metal wheelchair. My wrists and elbows were bound to the chair arms with broad fiber tape, the sort that is hard to unstick and just about impossible to break. My lower legs were lashed to the chair's metal struts with the same material. A broad sticky strip of it covered my face, from just below my nose to the point of my chin.

"Ah, I see the problem," Lyle went on. "But are you ready to talk nicely now, and not make a fuss?"

I nodded—one of the few degrees of freedom available to me.

Van Lyle nodded back. "Very good! And just in case you feel tempted to change your mind, let me point out that it would be quite pointless. This part of the installation is all automated. No one is here but the two of us."

He came across to me and touched one end of the tape that covered my mouth. But instead of pulling it loose, he paused to run his fingers along one side of my nose, and back down the other.

"What a nice, shapely adornment," he said. "Not at all like mine, eh? Before we finish, we'll have to do something about that."

I hadn't realized until that moment just how much he hated me. His nose was bent and slightly flattened, detracting from his rugged blond good looks. The mouth beneath the crooked nose twisted with anger as he ripped the tape away from my mouth.

I worked my lips against each other, wincing. A layer of skin had been torn away by the super adhesive tape, along with every fine hair on my face. I felt a trickle of blood down my chin.

The less discussion of noses, though, the better. I had broken Van Lyle's, half a light-year away from Sol, when he wouldn't take his lecherous hands off me. That had

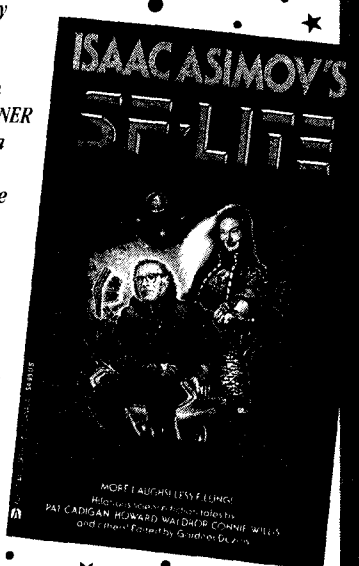
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE FUTURE LOOKS LITE!

Hilarious tales from the pages of

Isaac Asimov's Science Fiction Magazine.

Comedy isn't pretty, but it certainly spices up the cosmos when it's left in the capable hands of these talented authors: ISAAC ASIMOV roasts the literary scene in "The Critic on the Hearth," ESTHER FRIESNER gives a lonely SWG (Single White Giant) a little help in the dating game in "Blunderbore," CONNIE WILLIS teaches the old Bard new tricks in "Ado," PLUS more intergalactic giggles from these top writers: NEAL BARRETT, JR. • TERRY BISSON • PAT CADIGAN • SUSAN CASPER • RONALD ANTHONY CROSS • SHARON N. FARBER • JOHN M. FORD • KAREN JOY FOWLER • EILEEN GUNN • R.A. LAFFERTY • O. NIEMAND • HOWARD WALDROP • LAWRENCE WATT-EVANS • DON WEBB



EDITED BY GARDNER DOZOIS

Ace March/$4.99

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

been long ago, but unfortunately he didn't seem willing to forget it.

"You know McAndrew," I said. "All it took was the right word, and he was ready to head for Earth. Nothing that I said could stop him from coming."

"So I understand." Lyle nodded. "But you, Jeanie—surely you're much more sophisticated than that? I would have bet money against you following him down here."

Van Lyle's calling me Jeanie made my flesh crawl, but he was right. I didn't have the excuse that Mac had, the siren song, the magic words that had left him helpless: *a new invariant of nature.*

"You don't understand," I said. "I've spent half my life chasing after Mac when he got into trouble. By now it's second nature. But usually it's to some place halfway to the stars—not a trip down to Earth."

I had no real interest in telling any of this to Van Lyle, true as it might be. I was merely stalling, postponing the moment when he would tape my mouth again and carry out the next stage of the proceedings. I had little doubt what that was going to be. Lyle hadn't hauled me down to this processing plant, far offshore and a hundred meters beneath the surface of the sea, just to show off the advanced technology of Earth's Food Department.

It was also a very bad sign that he had mentioned the name of Anna Griss. In the past he had always refused to admit that he worked for her.

I wondered what he was waiting for now. It shows how desperate I was feeling, but I actually hoped he might be planning another shot at raping me. Let him do anything—anything that might provide enough time for help to arrive, or give me a thin chance of resistance. That was better than being strapped in the wheelchair, able only to move my head and trunk from side to side.

I didn't have much hope. This wasn't my environment, it was theirs. I might have an edge in deep space, but down on Earth, Van Lyle and Anna Griss held home field advantage.

And suddenly I had no hope at all. Because I heard the steel doors at the back of the chamber open, the ones through which I had been wheeled in. There was the squeak of unoiled bearings, and a few seconds later another wheelchair was rolled alongside mine.

McAndrew sat in it, his legs and arms tied to the chair's metal struts, not by sticky tape but by thick, knotted cords. His mouth was not covered.

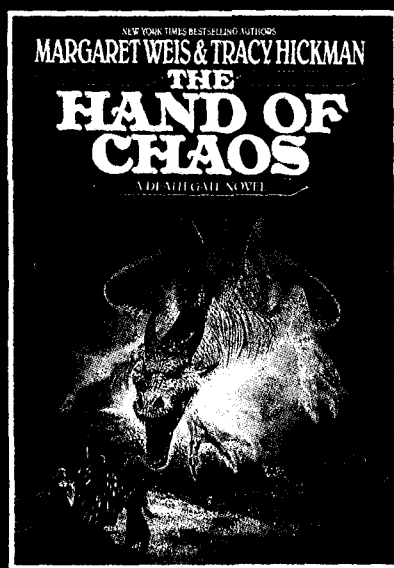
He stared across at me miserably. "I'm sorry, Jeanie," he said. "I really am. This is all my fault, every bit of it."

I tried to smile at him, and winced at raw, stripped skin. My lips began to bleed again. "Don't feel bad, Mac," I mumbled. "If it's your fault, it's my responsibility."

It had started at the Penrose Institute, over a month ago. I had

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MARGARET WEIS & TRACY HICKMAN



the New York Times bestselling authors of the Dragonlance™ series and the Darksword Trilogy

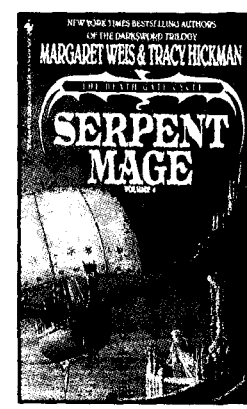
The quest continues as the fate of the universe rests in THE HAND OF CHAOS!

$21.95/$26.95C

Also available on BDD Audio Cassette

Enter the fourth elemental realm in the Death Gate Cycle's extraordinary universe–the water world of Chelestra.

$5.99/$6.99C



Don't miss the first three volumes in THE DEATH GATE CYCLE:

DRAGON WING: DEATH GATE CYCLE VOL. 1
$5.99/$6.99C

ELVEN STAR: DEATH GATE CYCLE VOL. 2
$5.50/$6.50C

FIRE SEA: DEATH GATE CYCLE VOL. 3
$5.99/$6.99C

SPECTRA BANTAM

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

been on the way home after a routine Europan delivery run. Orbital geometries happened to be favorable, so it was the most natural thing in the world for me to drop in on McAndrew. The institute, after a disastrous couple of years of bureaucratic rule, was once more under the steady but informal guiding hand of old Dr. Limperis, dragged out of retirement to put things right. I wanted to see how everything was going, and renew old acquaintances.

I headed straight for Mac's working quarters. He was not there. Instead, Emma Gowers was loafing in his favorite chair and staring at a display.

"Off in the communications center," she said. "He'll be back in a few minutes. You might as well wait here." She was as blond, beautiful, and blowzy as ever. And presumably as brilliant. She was the Institute's resident expert on multiple kernel arrays.

"Is he all right?" I asked. Mac usually had to be dragged out of his own office, unless he was off somewhere running an experiment.

"Oh, he's fine." Emma pushed her mass of blond hair higher on her head. "But you know McAndrew. He's got another pet project going. You can hardly talk to him any more."

I nodded. It was the most natural thing in the world to find McAndrew in the grip of a new scientific obsession. He would be delighted to see me, I knew that. But he might also be only vaguely aware of my presence.

I sat down next to Emma. "What is it this time?"

"There's talk of a new fundamental invariant. I'm skeptical, frankly, but he's a believer—at least enough to want to check it out for himself."

"Educate me, Emma. What do you mean, a fundamental invariant?"

Simple explanations were not Dr. Gowers's forte. She frowned at me. "Oh, you know. Things that don't change under transformation. Like the determinant of a linear system under orthogonal rotation, or the Newtonian equations of motion with a Galilean transformation, or Maxwell's equations with a Lorentz transformation."

It's an odd thing about Emma Gowers. Her own taste in men is for primitive specimens, dim and hairy objects who apparently decided to stop evolving somewhere in the early Pleistocene. Yet she insisted on assuming that McAndrew and I were on the same intellectual plane, just because we were longtime intimates.

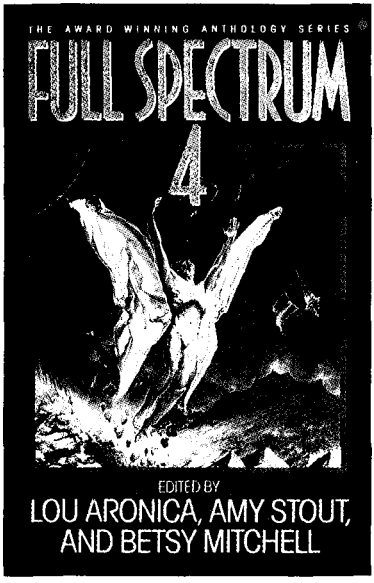
"Uh?" I wanted to say; but I was saved from new admissions of stupidity and ignorance by McAndrew's own bustling arrival.

"Using my chair *and* my data banks again, Emma," he said. "Out, out, out." And then to me, as though we had not been separated for months, "Jeanie, this is perfect timing."

Most people think that I tolerate behavior in McAndrew that I would never stand in any other human be-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

SHORT FICTION THAT CHALLENGES THE MIND AND STARTLES THE IMAGINATION – THE LATEST IN THE AWARD-WINNING SERIES



Powerful, thought-provoking original stories from twenty of the most interesting minds in speculative fiction today:

David Brin

Jean-Claude Dunyach

Nancy Kress

Ursula K. Le Guin

Martha Soukup

And fifteen more...

"One of the outstanding contemporary anthologies."
–Booklist

"May be the best original anthology ever produced."
–Locus, on *Full Spectrum 3*

496 pp. • Trade Paperback • $12.95 ($15.95 in Canada)

SPECTRA BANTAM

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ing, just because he's a genius. He is that, the best combination of theorist and experimenter to arise in physics since Isaac Newton—at least, that's what those few equipped to make the evaluation all tell me. But genius has nothing to do with my own tolerance of Mac, or his of me.

I can't do better than to say that we click. We are very different, but we touch at just enough points to make us stick.

McAndrew puts it differently. "A hydrogen bond," he has said to me, often enough to make it irritating. "Not an *ionic* bond, that's all set and rigid, or even a *covalent* bond, where things are actually shared. No. We're a *hydrogen* bond, loose and fluid and easy-going."

I'll just say that we like each other. And if he thinks I'm so dim that everything he says to me about science has to be deliberately "dumbed down," and if I think he is so wrapped up in abstractions that he ought not to be allowed outside in the real world without a keeper—well, that's acceptable to both of us.

This time he responded to my hug, but in an automatic and absentminded way. "If you're heading inward," he went on, "as I suspect you are, then I'll hitch a ride with you."

The space structure that houses the Penrose Institute is mobile, and at the time of my visit it was again drifting free, well outside the orbit of Mars. But *inward?* Mac's interests usually lay well beyond the edge of the Solar System.

"To Earth," he explained. And, as my eyebrows rose, "Och, don't worry, I'm not asking you to come with me. Drop me off at a libration point, Jeanie. That will do fine."

He knew my aversion to Earth, overcrowded and noisy and smelly. But I had always thought that he shared it, and he and I had other good reasons to avoid going there. One of Earth's most powerful people was Anna Griss, former head of Earth's Food Department, and now administrator of the full Food and Energy Council. Mac had cut off her arm with a power laser, out in the Oort Cloud. It had been done with the best of intentions, and it had saved her life; but I knew Anna. She would not have forgotten, or forgiven.

As for me, I had been a target for her hatred since the same trip, perhaps even more so, because I had challenged her authority—and proved her wrong.

It's no surprise that there are people like Anna Griss in the world. There always have been. Go back fifty thousand years, to a time when most of us were just grubbing along, looking for a decent bush of ripe berries or a fresher lump of meat. A few, like McAndrew, were busy inventing language or numbers, or painting the walls of the cave. And some, just a handful but too many in every generation, were seeking an edge over the rest of us: water access, or mating rules, or restricted entry to heaven. No matter how few they were, Anna Griss

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

would have been one of them.

So McAndrew knew very well what I was driving at when I stared at him and said, "Earth? Do you think that's a good idea?"

"It's a must," he said. "I'm going to visit the Energy Council. To be specific, I'm going to the laboratory of Ernesto Kugel, where there is evidence that something wonderful has been discovered: a new Invariant of Nature."

You could hear the capital letters.

"Told you so," said Emma Gowers. And she stood up, tugged her short dress down as close to her dimpled knees as it would go, and swept out.

If McAndrew's words were designed to impress me, they failed.

"Mac," I said. "With me, three invariants and a dollar will get you a cup of coffee."

"You're a barbarian, Jeanie," he said amiably. "I'm just using the term that Kugel used: *a new invariant of nature*. Would it help if I rephrased that, and said that he claims to have found an important new conservation law?"

It did help, because I have been around McAndrew for a long time. But it didn't help much.

"New, how?" I asked. "I mean, I know that energy is conserved, and momentum is conserved—"

"In a closed system."

"In a closed system, fine. But how can there be a *new* conservation law?"

"Well, that's where things get interesting. Now and again, physicists realize that certain things that they used to think of as independent are actually different aspects of the same thing. For example, a few hundred years ago, heat and motion and light used to be thought of as quite separate entities. But then, after lots of work by people like Rumford and Joule and Kelvin, scientists realized that those separate things were all forms of *energy*. And though different types of energy can be converted, one to another, they decided that the total could never be changed. That was the principle of conservation of energy.

"Starting with the work of chemists like Lavoisier, people also observed that mass is conserved, too, in every form of physical and chemical reaction. So you had conservation of energy, and you had conservation of mass. But the big breakthrough came in 1905, when Einstein showed that mass and energy are equivalent, and that their *total* is the thing that is conserved, rather than either one. And he also showed that it didn't matter which reference frame you use for the measurements. The energy-momentum four-vector is invariant. That single principle helped to unify the whole field of physics.

"The same thing happened with angular momentum. For a while it looked as though it wasn't conserved in nuclear reactions. But then workers in quantum theory found that an *internal* angular momentum had to be added to the picture for many particles—spin—and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

after that angular momentum became a fully conserved quantity. That, too, was a terrific generalizing idea. Did you know that in 1931 Pauli deduced the existence of a new particle, the neutrino, just because the principles of conservation of energy and of angular momentum required that it exist?"

"I did know that, Mac"—once—"and you haven't answered my question. I realize very well that there are conservation principles. But how can there possibly be a *new* one?"

"I can give you two possible answers to that. The first is that the physical laws of the Universe, as we already know them, admit some conserved quantity that we simply haven't recognized yet."

"Isn't that unlikely?"

"You might think so, after all the time and effort we've put into searching for that sort of invariance principle, for the past 150 years, with nothing to show for it. But there's another possible answer, one that at first doesn't sound much more likely. It could be that Ernesto Kugel's lab has discovered a new fundamental form of physical law."

McAndrew was starting to make sense to me, which should have been a tip-off right there that something was about to go wrong. Usually, the longer that we talk the more confused I become.

"You mean, a new force? Something like discovering gravity for the first time?"

"That will do nicely. We happen to have been aware of gravity for as long as humans existed, and we've had theories of it for over five hundred years. We've known the electromagnetic force for three centuries, and the strong and weak forces that govern nuclear interactions for just a couple. But gravity is actually a very weak force, something we only feel because very large bodies are involved. Suppose that we had evolved as tiny creatures, no bigger than fleas, in the middle of an energetic plasma? Then gravity wouldn't have much immediate effect on our lives. We'd have learned about electromagnetism early, but we might still not know about gravity."

I was finally getting the head-swirling buzz that usually accompanied a McAndrew explanation. "But we *didn't* evolve smaller than fleas, in the middle of a plasma."

"No. But different environments make it easy to detect different forces."

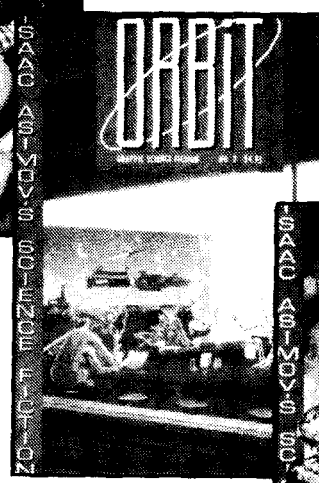
"But less than a year ago you were telling me that the place to look for new laws of nature is out in deep space where we've never been, out where the Sun and planets don't interfere with observations."

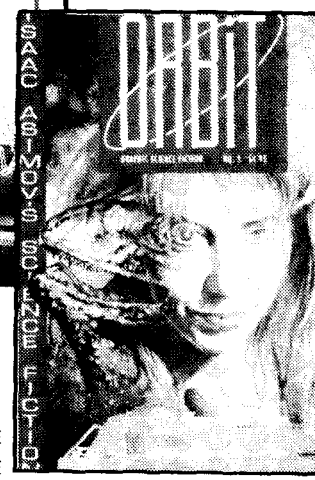
"I did say that. But suppose I'm *wrong*. Wouldn't that be exciting, Jeanie? A new law of nature, sitting there under our noses all this time, and detectable down on the surface of Earth."

And there you had it. Most people hate to learn that they are wrong. Not McAndrew. When he's

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A Special Offer For *Analog's* Readers





ORBIT

VOLUMES 1 THROUGH 3, $4.95 EACH.

OR ORDER THE COMPLETE, THREE VOLUME SET FOR ONLY $9.95 (A 33% DISCOUNT!)

FIND THE BEST GRAPHIC SCIENCE FICTION IN ***ORBIT***, THE GRAPHIC ANTHOLOGY ***L.A. READER*** CALLED "...THE BEST—IF NOT THE ONLY—WAY TO VISUALIZE [SCIENCE FICTION]." TOP AUTHORS FEATURED INCLUDE ISAAC ASIMOV, BEN BOVA, FREDERIK POHL, LUCIUS SHEPARD, LAWRENCE WATT-EVANS, AND OTHERS... AND THE ARTISTS INCLUDE AWARD-WINNERS SUCH AS JOHN BOLTON, DAVE STEVENS, JOHN POUND, AND TOM YEATES. GET INTO ***ORBIT*** TODAY!

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

❑ *ORBIT* #1 $4.95 ❑ *ORBIT* #2 $4.95 ❑ *ORBIT* #3 $4.95 ❑ ALL THREE $9.95

ADD $1.00 POSTAGE PER ORDER. SEND COUPON AND CHECK OR MONEY ORDER IN U.S. FUNDS TO:

DEPT. AN 043**, ECLIPSE/ORBIT, P.O. BOX 1099, FORESTVILLE, CA 95436**

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

proved wrong, he's ecstatic. It means he's learned something new, and that's his main reason for existence.

But I still hated the idea that he'd be going to Earth. "This Ernesto Kugel. If he's in the Energy Department, that means he works for Anna Griss."

"So?"

"Do you know him?"

"Not personally. But I know his work, very well. Ernesto Kugel built the *Geotron*."

Capital letters again. I resisted the urge to be distracted by that. "Is he the sort of person you believe might make a fundamental new discovery?"

"Oh, no."

"Well . . . "

"Not *him*. He's an engineer—and a first-rate one—but he's no physicist. Someone in his lab would have done the work. Someone I don't know. Kugel would probably put his own name on the report just to make people pay attention."

"But surely you don't think that some total *unknown* would have come up with a big scientific breakthrough?"

"Jeanie, the big breakthroughs *always* come from some total unknown. And genius can pop up anywhere. Kugel got lucky."

"Maybe. But Kugel works for Anna Griss, and she hates your guts. Don't you remember what you did to her?"

"Ah, away with you." He ran his fingers through his thinning hair. "Jeanie, I'm sure that's all long forgotten. The invitation to visit Kugel's lab was *approved* by Anna. She signed off on it."

"Did she?" I said. "Well, of course that makes everything fine, doesn't it?"

I should have known better. Irony is totally wasted on McAndrew.

He beamed at me. "I knew you'd see it my way when you had the facts, Jeanie. How soon can we leave?"

I think my inner voices are pretty good when it comes to warnings of trouble. The problem is, I don't always listen to them.

This time I allowed another event to occupy my mind when I ought to have been worrying about McAndrew's visit to Earth. In my own defense, I must say that the intrusion came from outside. When the linked spheres of the Assembly were halfway to Earth, with Mac and me cozy in the control section, I received a message from Hermann Jaynsie at the United Space Federation headquarters.

It was long and wordy, because Hermann is long and wordy, but I can boil it down. It said, in essence, "What the devil did you do, Captain Roker, on your last cargo haul from the Jovian system to Earth? We thought we had a deal with them for four billion tons of vegetable foodstuffs, grown in our Europan ocean farms. Now Earth is telling us they don't want to take delivery of any more shipments."

The lightspeed round-trip travel

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

time to USF Headquarters was seven minutes, so I couldn't exactly chitchat back and forth. But I did send him a pretty long reply, which again can be boiled down to, "Damned if I know, Hermann. They seemed happy enough with what I dropped off last time."

My livelihood wasn't hurt by the cancellation of a food supply contract with Earth, but my ego was, and I spent a good deal of time fuming. Was it Anna Griss, getting at me in a remarkably indirect way? I knew she was capable of subtle malice. But I still looked for a more logical explanation. I couldn't see even Anna risking Earth's food supply just to get at me.

I had no intention of going to Earth, or wasting another minute thinking of Ernesto Kugel and his mysterious invariant. So when we arrived at the Colony drop-off point, where the Assembly would be moored until its next trip out, McAndrew and I went our own ways. He headed down on a shuttle, as excited as a child on his way to a birthday party. I mothballed the ship, and handed it over to the local USF maintenance crew.

That took me three days. And then on the fourth morning, without thinking about what I was doing, I found myself aboard a shuttle vessel.

Heading for Earth.

I had been given a number to reach McAndrew, and I forwarded a message to tell him that I was on the way, and when and where I would arrive. I didn't ask, but I rather hoped he might be waiting for me.

He wasn't. And it was one of life's less pleasant experiences to pass through entry formalities, search for Mac's face, and see Van Lyle waiting for me on the other side of the barrier.

"Captain Jeanie Roker." He reached out and took my hand. "It's been a while."

I shook his hand, but my feelings must have showed on my face, because he laughed and said, "Don't say anything. You did what you did, and I thoroughly deserved it. Let bygones be bygones."

But he touched his fingertips to his bent nose.

I said, "McAndrew?"

"Is having too much fun, Captain, to tear himself away from the Geotron facility. He asked me to come to the port, and take you there to join him."

It sounded awfully plausible. But I couldn't put the past behind me as easily as he claimed to have done. "Professor McAndrew *asked* you to come and meet me?"

Instead of answering, Lyle took a palm-sized phone from his pocket and tapped in a string of numbers. "Four one seven," he said into the unit. After a few seconds' pause he handed me the phone.

I found myself staring into the tiny screen at a familiar high-cheekboned face. His wispy hair was sticking up in little random spikes, and his color was a fraction ruddier than usual. I couldn't see his fingers,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

but I could bet that he was cracking the joints.

"Jeanie," he said, as soon as he saw me. "I didn't expect to hear from you until you arrived at the Geotron. What's wrong? Are you having problems getting underwater?"

Underwater? But it was McAndrew, without a doubt. McAndrew live, healthy, unrestrained, and by the look of it having the time of his life. He actually did not sound too thrilled by the news of my arrival.

"No problems," I said. "I touched down just a few minutes ago."

"Right then. I'll have to go. We're very busy here." And his picture promptly vanished. The phone link disconnected.

That was the genuine McAndrew, without a doubt, and he was clearly all right. The smart thing to have done at that point would have been to apologize to Van Lyle for my rudeness, plead prior job commitments off Earth, and turn right around and head back to space. Instead I handed the little phone back, sighed, and said, "Before I make a complete fool of myself, tell me one thing. What *is* a Geotron, and *where* is a Geotron?"

Van Lyle stared at me. I think I had actually managed to surprise him.

"You're asking *me* what a Geotron is?"

"I am."

"But didn't Professor McAndrew explain to you?"

"He would have done—if I had given him half a chance."

"Well . . . I'm not a scientist, as you know very well."

"Nor am I. That ought to make things easier for both of us."

We started walking toward a sleek high-speed aircar, as Van Lyle said, "Well, you know what neutrinos are, don't you?"

"Yes. They're elementary particles, with no charge, and no rest mass. Their discovery was predicted by Pauli in 1931, because they were needed to preserve the laws of conservation of energy and angular momentum."

That was gross intellectual dishonesty, and I knew it. But Lyle didn't. He looked quite impressed.

"Right," he said. "All they have are spin and energy. And they don't interact much with ordinary matter, unless they have very *high* energy. That makes them the devil to detect. A free neutrino can easily pass right through the Earth. But sometimes that can be an advantage. Like if you want to do down-deep exploration. And you decide to build a Geotron."

He explained the rest of it as we took off and he flew us west at Mach Ten. The staff of Earth's Food and Energy Department had done all the easy exploration of Earth's interior that they could do—which meant prospecting to about twenty kilometers down. Now they were forced to search deeper, or else be dependent on off-planet resources. The Geotron was nothing more than a huge kind of X-ray machine, for examining the inner structure of the Earth. But instead of X-ray

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

TECHNOLOGY UPDATE

Now have music in every room... without wires!

New wireless technology broadcasts music through walls, ceilings and floors.

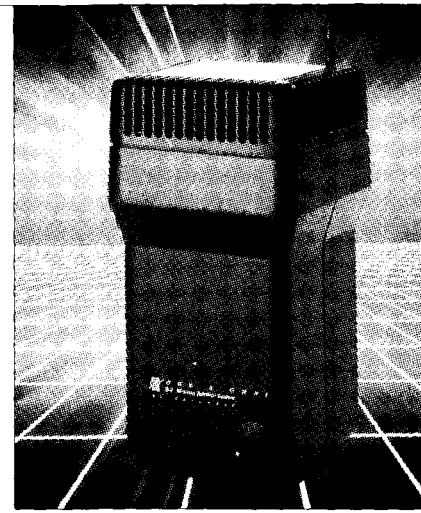
Ever drag your stereo system into another room of your house just so you could listen to it? Probably not. Most people can't afford to risk ruining their equipment. With these new wireless speakers, you won't have to. Now you can listen to music anywhere in or around your home without lugging around heavy equipment or stringing wires.

Imagine listening to your favorite CDs, records, tapes, radio station or TV show anywhere in your home. Imagine stepping into the shower, pool, or hot tub and having a self-contained wireless speaker right there with you.

State of the art sound. These patented wireless speakers work with any stereo, TV, or VCR. And wait till you hear how they sound...the deep, rich bass, the crystal clear highs. You'll get the perfect volume for any room because each one has its own volume control on/off switch. These wireless speakers are also self-amplified, so they can't be blown out.

Easy installation. The powerful Datawave transmitter plugs into a headphone, audio-out or tape-out jack on your stereo, CD player, VCR, or TV. Use *one* transmitter to send both left and right channels to an unlimited number of speakers. Or use *two* transmitters to send the left and right channels separately for full stereo separation on at least one pair of speakers.

'No Questions Asked' guarantee. You get a *complete "No Questions Asked" 30 day money-back guarantee*. Plus the Datawave speakers come with a 90 day manufacturer's warranty.



The Datawave wireless speaker breakthrough
This amazing water resistant speaker has its own built in receiver and amplifier. Utilizing FM technology for a 150 foot range through walls, it contains a "vertically suspended" base reflex speaker providing a 360 degree surround sound pattern. Designed in an "acoustically balanced" bookshelf size (8.5H x 4.5W x 4.5D") it operates on four 'C' batteries or with an optional AC adaptor.

Factory direct offer. For a limited time, we can send these Datawave speakers directly to you far below the $149 retail price...

Datawave Transmitter* ..... **$29** $2 S&H
Datawave Wireless Speaker ..... **$79** $6 S&H
Extra speakers ..... ***$10 off each***

**You will need at least one transmitter to operate your speakers. To receive this special pricing you must mention promotional code* AS1112.*

For faster service, call toll-free 24 hours a day

800-992-2966

VISA MasterCard DISCOVER

To order by mail send check or money order for the total amount or enclose your credit card number and exp. date (VA residents add 4.5% sales tax). Send to:

COMTRAD INDUSTRIES
2820 Waterford Lake Dr. Suite 106 Midlothian, VA 23113

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

radiation, which would penetrate no more than a few feet, the machine generated tight beams of high-energy neutrinos. They could be sent in any direction. They passed right through the middle of the Earth, scattering off structures in the interior, and emerged at points around the world where their numbers were measured. Then a very fancy set of computer programs took the information on the detected neutrinos and used that to deduce the interior structures that they had encountered in their path from the Geotron to the detection chambers.

"Looking for primordial methane, as the primary target," Lyle explained. "Pockets of compressed methane left over from the time of the Earth's formation, and still trapped deep inside."

"To use as fuel?"

"Lord, no. Methane's far too valuable an organic material to burn—even if the laws permitted it. We use it for complex hydrocarbon synthesis."

"Have you been finding any?"

"More than you would believe."

It occurred to me that I had an explanation to offer Hermann Jaynsie for Earth's lack of interest in the food supply contracts. There would never be a shortage of nitrogen on Earth, with an atmosphere that was nearly 80 percent of that gas. If they now had enough hydrocarbons, and enough energy, elemental food synthesis would be a snap.

The most surprising thing was Van Lyle's willingness to tell all this to me, an outsider. Didn't Earth's Food and Energy Council *care* any more who knew what? Or were there missing pieces that were not being mentioned?

"I understand the Geotron," I said. "But what was that about being underwater?"

"Well, you don't think we'd put it on land, do you? Solid surface is too precious. We put it on the seabed." And then, when I looked puzzled. "Captain Roker, just how big do you think the Geotron is?"

"I've no idea."

"Then I'll tell you. The main ring is forty kilometers across."

Forty kilometers. A long day's walk. Or in this case, a long day's swim.

"So it was built on the Malvinas's continental shelf," he went on. "Where there's a lot of available seabed, and the water is only fifty to a hundred meters deep."

"Malvinas?"

"Off the east coast of Patagonia. We'll be there in half an hour. Then you can see it for yourself."

In the next few minutes I learned that the Malvinas coastal zone was now Earth's hottest development area, site not only of the Geotron but also of the world's most modern food facilities and genetic laboratories. All, naturally, off-shore, in the shallow seas that ran for hundreds of kilometers east of the mainland.

And while Lyle talked, I struggled to remember where Patagonia was. Southern hemisphere? Definitely. South America? Probably. It oc-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

curred to me that although I could quote the size and approximate orbital parameters for every major body from Mercury to the edge of the Oort Cloud, I did not know the geography of Earth.

We were flying near the edge of the atmosphere. I stared up at the familiar black sky, with the brightest stars showing, then turned my eyes down to wisps of white cloud, and far below them the alien sea.

I felt, as usual when I was on Earth, a long way from home.

Our descent to the Geotron did nothing to ease my feeling of alienation. I had not realized that our aircar was amphibious, until we were skimming a few feet above long, rolling waves. We touched down, planing across the surface in a cloud of spray. Lyle took his hands off the controls.

And instead of bobbing on the rollers, we kept descending. After a few moments of panic, while the water level rose past the windows and plunged us into a green gloom, I realized that the aircraft was not only an amphibian, it was also a submersible. I could hear the thrum of engines aft, and see the yellow beams of light that lit the way ahead and behind us for many meters.

"Lights for passenger viewing only," explained Lyle. "Just so you can enjoy the sights. I haven't been controlling the craft since we touched down on the waves. We'll be homed in to the Geotron facility automatically—sonic control, of course, not radio. Radio signals won't travel through water."

"How far is it?"

"Just a couple of kilometers. There was no point in landing too far away, but the final approach is interesting."

We had been angling steadily downward. The natural sunlight was vanishing, breaking to cloudy patches of darkening green. Shoals of silver-green fish and what looked like endless thousands of purple squids darted through the beams of our headlights. Then they too were gone, and I had my first sight of Earth's sea-floor, a smooth grey-brown carpet of fine sediments that swirled up like an ominous mist behind us in the wake of our propulsion jets.

That alien fog made me uneasy. I was much comforted when the huge silver wall of the outer Geotron ring appeared ahead, and we moved to an underwater docking. That felt quite familiar to me. An inward pressure of seawater replaced the space environment's outward pressure against vacuum, but the same sort of locks were needed. And once we were inside, we could have been in any controlled one-gravity environment between the Vulcan Nexus and the Hyperion Deep Vault.

Van Lyle led the way through the set of connected chambers that formed the control nexus for the Geotron. Other maintenance areas were spaced all around the rim of the main rings, a couple of kilometers apart. After a final up-and-down

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ride over the top of the inner ring, we were finally spilled by a moving stairway into a big square room, partitioned off into dozens of small work cubicles.

McAndrew sat in one of them with a man and a woman in their early twenties. His shoes and socks were off and he was staring at a listing that filled the whole of the cubicle wall. He looked well, was obviously unrestrained, and gave every impression of a man totally at home and thoroughly enjoying himself.

"There he is," said Lyle. "I was wondering, why does he take his shoes and socks off when he's working?"

"In case he needs to count to more than ten." But I didn't know the real answer, any more than Lyle did, and I had known Mac for a long time. At least he wasn't cracking his toe joints at the moment.

We walked forward. Mac saw me first, and stood up. "Jeanie! This is Merle Thursoe and Tom O'Dell. We're setting up a really great experiment."

He nodded to me, almost dismissively, and turned back to the display. Then something—maybe my snort of anger—must have told him that this wouldn't quite do for someone who had come so far to see him.

"Tom, Merle," he said, "would you carry on without me for a few minutes?" And then, turning back to me and standing up, "Jeanie, I don't think you know Ernesto Ku-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

gel. Come on. You have to meet him."

He walked me right through the complicated center of the room, to a cubicle no bigger or better furnished than any of the others. Sitting at a desk there, facing outward, was a serious little man wearing a formal black suit, white shirt, and dark blue neckerchief. A matching blue rose adorned his lapel.

"Director Ernesto Kugel." McAndrew was at his most formal. "May I present Captain Jeanie Roker."

Kugel stood, came around his desk, and bowed, giving me a splendid view of the top of a hairless scalp as smooth and white and round as an ostrich egg. His whole head was free of hair, except for the neatly trimmed black moustache on his upper lip. I decided that nature could never have created the effect. Ernesto Kugel had worked on it.

I was all set to dislike the man, when he straightened up and took my hand.

"I am delighted to meet you, Captain Roker," he said, in a deep, smooth voice. "Professor McAndrew told me that you are most competent. What he did not mention is that you are also elegant and beautiful."

I stared at him. "Does that line work often?"

He gazed back, unblinking and unashamed, his brown eyes as bright and lively as a bird's. "Not so often." He suddenly smiled, and it

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

transformed his face. "But let us say, it works often enough."

"And I suppose that joking about it works, too?"

"Sometimes. Most times. And if it does not"—he shrugged—"what harm has been done? God made two sexes, Captain Jeanie—and luckily that was exactly the right number."

I suddenly found it impossible to dislike him at all. We stood grinning at each other, until McAndrew said, "I want a word in private. Just the three of us."

"Of course." Kugel nodded his head toward the cubicle. "But this is as private as we get. I believe it is bad if I hide myself away from where the real work is done. Bad for my staff—and worst of all for me." Kugel waved to us to sit down. His desk was as neat and organized as Mac's was usually messy.

McAndrew didn't waste any time. "Ernesto, I could explain our discussions to Captain Roker—to Jeanie. But I would feel much more comfortable if you were to do that."

"Of course." Kugel leaned toward me, and spoke in his low, confidential voice. "You should sleep with him, you know. You two should have children."

I turned to McAndrew. "You brought me in here, just to hear a proposition on your behalf? You ought to be old enough to handle your own public relations."

"That's not what I meant!" Mac waved at the other man. "Keep going, Ernesto."

"Of course." Kugel was chuckling to himself. "What I mean, Captain Jeanie, is that the man standing before you, Arthur Morton McAndrew, is a great genius. His genes, and your genes, should be preserved and cherished. I knew his reputation long before he came here, but now I realize that he is one of the immortals."

"But I'm not fit to carry Dr. Kugel's coat, when it comes to large-scale engineering," McAndrew added. Praise of his abilities makes him terribly uncomfortable.

I sighed. It was obviously a mutual admiration society. Apparently I had traveled the distance from Moon to Earth, just to hear the two of them compliment each other.

"But to be specific," Kugel said, after a long pause in which they sat nodding and smiling. "Before Professor McAndrew's arrival, I and my staff had operated the Geotron for three months. In all that time, we had observed an inexplicable loss of neutrinos. We know how many the machine produces. And we know how many we are finding, in each of our mobile detectors. From that it is a simple calculation to estimate the total number escaping over the whole of the Earth's surface. There were too few of them, less than we were creating—and not by a number within the reasonable bounds of statistical error. There were *far* too few. For a long time we thought that it must be a matter of phase changes, or instrument calibration. Finally we decided that could not be the case.

"We had no explanation. Until

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

AMERICA ONLINE® AND DELL MAGAZINES PRESENT YOUR WINDOW INTO THE FUTURE

Connect with the editors of *Isaac Asimov's Science Fiction Magazine* and *Analog Science Fiction & Fact Magazine* at "live" events, read Isaac's editorials, and discuss SF—everything from Star Trek to Star Wars and from Asimov to Zelazny—with thousands of fellow SF buffs from coast to coast.

IAsfm is just the beginning as you dive into the world of interactive services with America Online, America's most exciting online service. Download from tens of thousands of useful programs and files, join other unique clubs and special interest groups, communicate with your newfound SF friends through electronic mail, and much more!

Get FREE online time and FREE software to experience Asimov's Science Fiction Center and America Online! Just call 1-800-827-6364, and when asked for your extension number, say 5894, and tell us what kind of computer you have. We'll send an America Online starter kit to you right away!

1-800-827-6364

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

two of my brightest young staff, Thursoe and O'Dell, became involved."

"Jeanie met them both," McAndrew said.

"Then you must know, Captain, that both of them are far brighter than I. They proposed a specific physical reason for the absence of neutrinos, arguing by analogy to the conserved vector current theory of Feynman and Gell-Mann. That would imply the existence of a new kind of weak force, and a new physical invariant. It was speculative, but I thought it looked very interesting. I mentioned the work and theory in my weekly report of activities to the Food and Energy Council. I did not expect that it would receive external circulation—until the sudden arrival of Professor McAndrew's request to visit the Geotron facility, and review the evidence."

He turned to Mac. "Now I think that you should continue."

"Well . . ." McAndrew became uneasy. "I don't like to criticize other people's work, you know, and the O'Dell and Thursoe theory is highly ingenious; but it did occur to me that there could be a simpler explanation."

"You knew it," Kugel said flatly. "Knew it before you ever left the Penrose Institute."

"No. Everything depended on the experimental results." McAndrew turned back to me. "You see, Jeanie, the Geotron had been operating at a very precise and very high neutrino energy, a domain that to my knowledge had not been explored before in any detail. It seemed to me that the explanation for the loss of neutrinos could be something as simple as resonance capture. Certain materials, common in Earth's interior, may have a very high capture cross-section for neutrinos of the Geotron energy. And that could account for the observed difference between production and detection. It would also be a most important scientific discovery, because such a resonance is not predicted by current theories."

"Mph," I said. It meant, Mac, I have now heard more than I wish to know about lost neutrinos.

But McAndrew, as it turned out, was close to the end. "And there's a very simple way to tell if I'm right," he said. "In less than twelve hours we can do an experiment with a modulated Geotron energy, far from possible resonance, and get an instant neutrino count. That's what O'Dell, Thursoe, and I have been working on. And we are just about ready for final setup."

As I said, I've known McAndrew for a long time; long enough to interpret what he had just told me: he was all ready to do a neat physics experiment, and for the next half day nothing in heaven or Earth would budge him from the Geotron facility.

That conviction was at once reinforced by Ernesto Kugel. "You are of course welcome to remain here during the experiment," he said to me placatingly. "On the other hand, one of the administrator's own staff

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

members suggests that you might find a visit to our new food production plant, a few kilometers away, much more intriguing. He would be happy to serve as your escort."

"More than happy." And dead on cue, Van Lyle was standing at the entrance to the cubicle. "Ready when you are, Captain Roker."

It was all fine—and all just a little bit too pat.

"I need to go to the bathroom," I said, "before we leave."

"Sure."

Inside the stall I sat down on the toilet seat, put my head in my hands, and thought.

I was uncomfortable. What was the source of my discomfort? Nothing that I could put a name on, except that maybe the leopard had changed his spots a little too completely. This Van Lyle was not the Van Lyle I had known.

But what then were the dangers? Nothing that I could think of.

I was being paranoid. I went back out. I gave McAndrew a farewell hug, while Ernesto Kugel looked on approvingly. But as I was doing it I whispered in Mac's ear, "I'm going to look at the food production center with Van Lyle. If I'm not back in twelve hours, you come after me."

McAndrew is not good at this sort of thing. "What?" he said loudly.

"You heard." I did not raise my voice. "See you soon—I hope."

Earth is an amazing place. It's a spent force, a used-up relic, a crusted dinosaur that the rest of the system looks back on and shakes it head.

But it doesn't know that—or at least it won't admit it.

The Malvinas food production facility was astonishing. On the seabed, powered by abundant fusion energy and with nothing but the raw elements as working material, the production center was making foodstuffs as good as any I'd tasted through the whole system. No wonder that Earth, with a ten-thousand-year supply of primordial methane promised by Ernesto Kugel, wanted to renege on supply contracts. It had little interest in what it saw as extortion from the outer system.

Earth looked like—dare I say it?—the planet of the future.

Maybe it was that, the total unreality of the experience, that made me lower my guard. Lyle and I were walking through a chamber where vat after vat of synthesized milk and beef extract stood in ferment.

"We'll visit the organic recycling center next," he said. "But first, smell this." We paused in front of an open container, much smaller than the others. "It is Roquefort cheese. Synthesized, but you'd never know it. Lean over, stick your head in, and take a good sniff. Then I'll give you a taste."

I leaned over the tub. And I passed out cold, without ever knowing that I had gone.

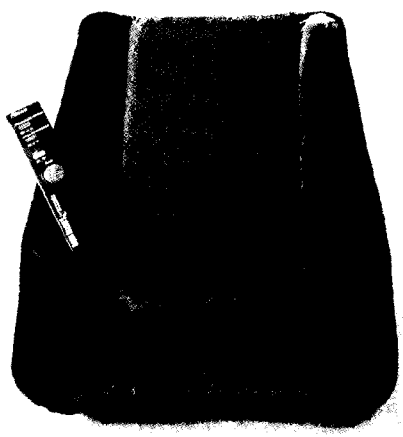
When I came to I was in a wheelchair, bound but not yet gagged. Lyle was standing at my side.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MAIL ★ ORDER ★ MALL

▼ THE MAGICAL SPARE BED

It's almost like pulling an extra bed out of a hat. Unlike most spare beds that gobble up storage space and are unwieldy to move, this one rolls down to fit a 36"-long, 3"-diameter canvas case, to stash in a closet corner, car trunk, camper, anywhere. Yet it unrolls in minutes to a full-size 27" x 73" bed that will even accommodate 6-footers, supports up to 500 pounds and is comfortable to boot. The secret's in the inventive construction: a cotton canvas sling is supported on laminated steel legs with 6 steel springs for cushioning and stability on rough ground. Toss the carrying strap over your shoulder and go — camping, beach, poolside, the 10" legs keep it off damp ground and sand. Of course, this bed is indispensable at home, country home, dorm — even for kids in motel rooms. A superb value at **$61.98** ($12.25) #A1931.



▼ BACK RELIEF BY POLLENEX

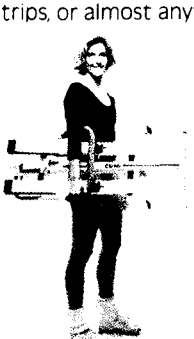
Are you one of the millions of Americans who suffers from low back pain? Do hours of prolonged sitting leave you aching or numb? If so, then the Pollenex Back Relief is just what the doctor ordered. Back Relief's unique design cradles your back in comfort and features multiple combinations of massage and heat. The inflatable lumbar cushion conforms to the shape of your back. Dual massaging elements can be used separately or together for full back massage. Handy remote control lets you select upper/lower massage, low and high intensity as well as heat control. And the soothing massager works 2 ways -adapter #1 plugs into any indoor electrical outlet while adapter #2 plugs into car, van, or truck cigarette lighter. So Back Relief is perfect for car, home, or office. Plush, durable fabric cover adds extra comfort. **$119.98** ($6.75) #A2001

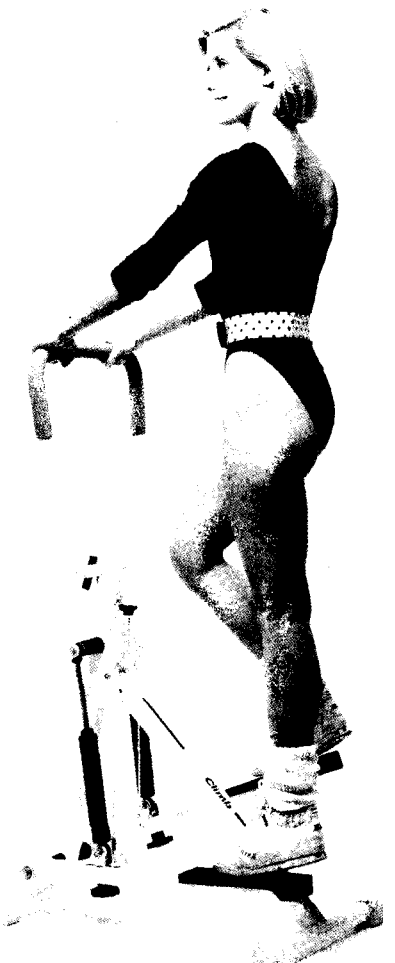
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MAIL ★ ORDER ★ MALL

▼ STEP UP TO A HEALTHIER YOU

Doctors, physical trainers, and athletes agree that stair climbing is one of the best forms of aerobic exercise. You can achieve your fitness goals without the severe jarring or pounding associated with running or jogging. That's why the foldaway ExerClimb™ is the perfect piece of exercise equipment. The ExerClimb™ improves cardiovascular function, increases endurance, burns body fat, and conditions major muscle groups to tighten and tone upper body, thighs, hips, buttocks, and calves. And results can be seen with a twenty minute workout three times a week. It is quiet enough to let you exercise while watching TV. or listening to your favorite music. The hydraulic powered ExerClimb™ features sturdy steel construction, magnum series shocks and individual tension adjustment to insure a high intensity, low impact workout. Compact and lightweight (28 lbs.) this incredible machine fits in virtually any size room. When opened for use, it measures 28"H x 27"L x 16"W. Plus, its unique fold-away feature makes carrying and storage a snap. Perfect to take along to your office, trips, or almost anywhere. Some assembly required, using only screwdriver and pliers. For all these great features, one would expect to pay much more, but the ExerClimb™ has a very trim price tag. So now there is no reason not to "step" into better shape. Ninety day warranty. **$119.98** ($15.00) #A1998.





TO ORDER: Send check with item number for total amounts, plus shipping & handling shown in ( ) payable to **MAIL ORDER MALL** DEPT 043 AN, PO. Box 3006, Lakewood, N.J. 08701, or call TOLL FREE **1-800-722-9999**. NJ residents add 7% sales tax. We honor MasterCard, Visa, and American Express. Sorry, no Canadian, foreign, or COD orders. **30 day money back guarantee for exchange or refund.**

Magalog Marketing Group Inc © 1991

1905 Swarthmore Ave. Lakewood, N.J. 08701

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Ah, there you are, Jeanie," he said in a cheerful voice. "Back with us at last. Are you ready for action?"

My head reeled, and a cloying smell was still in my nostrils. How long had I been out? I didn't know, but it felt like an age. McAndrew might arrive at any moment. I had to think, and I had to survive until that happened.

"I don't know what you're up to," I said, "but I know it won't work. They'll come after me."

"Will they now?" Lyle cocked his head politely. "Don't take this wrong, Jeanie, but I think you are mistaken. Though I have to say that I am looking forward to the appearance of Professor McAndrew. The show wouldn't be the same without him. I also think it would be better for the time being if your mouth were taped, just in case." And a minute later, "I must say it was a surprise to me that you came here at all."

That, I think, is just where we came in. And a couple of minutes later it was Mac's arrival in a second wheelchair, pushed by Anna Griss herself, that sent me to a final misery.

"Mac," I whispered, after he had been rolled up alongside me. I was already full of an awful suspicion. "Where are the others?"

"Others?" He frowned at me, high forehead wrinkling. "Others? I came by myself."

McAndrew had done what I asked him to do—literally. He had come after me. Alone.

Well, at least there were few illusions left. And when Anna Griss came forward to stand in front of us, there were none. She was, as ever, elegantly dressed, carefully made up, and totally self-confident. She stared at us for a few seconds without speaking. At me, I would suggest, with a total cold hatred; at McAndrew, as at a wayward child who despite the best of advice has gone terribly and incorrigibly wrong.

"It took a while, didn't it?" she said. "How long has it been since the Oort Cloud? But it finally worked out all right. I knew it would."

"You won't get away with this, you know," I said. "People know where McAndrew is. They know where I am."

"I'm sure they do," said Anna Griss. "But accidents happen, don't they? A tour of the recycling facility, an unfortunate entry into a clearly forbidden area. . . ."

"You're a monster."

"Thank you. But I don't think I need to listen to that sort of thing. And I don't need to watch it." She turned to Lyle. "Put the gag back on the mouthy one. She talks too much. Then finish both of them. Before you do that, I need one more word with you. I'll be outside."

Typical Anna. She wouldn't watch, she wouldn't listen; so if there ever were an investigation, for any reason, she could proclaim her innocence. Hear no evil, see no evil.

She left. But Van Lyle was still there, and he was more than

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

enough. He walked forward, sticky tape in his hand, and stood in front of me.

"It will be nice to hear you scream, Jeanie," he said quietly. "I won't be able to give you all that you deserve, the thing I'd really like to give you. We don't have time for that. But I can't wait to hear you grovel. I want to hear you *beg*, Jeanie."

"Maybe you will." I made my voice quiver. "And maybe you won't." He was moving closer. "But if you tape my mouth, you'll never hear anything from me. Ever. So go ahead."

He hesitated. "You'll beg all right," he said, "and you'll grovel. Trust me, Jeanie. You'll plead, and you'll beg, and you'll scream. Just you wait."

He left the room. But he had not taped my mouth.

Mac's wheelchair stood right next to mine. "Don't move," I said, and I leaned as far over to the left as I could. I could get my mouth down to the cords that bound his right hand—just.

Undoing knots in thick cord may sound easy. It isn't, especially when you can't see what you're doing, you're in a desperate hurry, and you have to work only with your mouth. The lips are very sensitive organs, but we are visual animals. I felt with my tongue and lips, tugged and twisted with my teeth, and was convinced that I was getting nowhere.

I forced myself to remain calm, to be patient, to pull gently instead of tearing and biting. McAndrew did not move, even when my teeth were catching more of his flesh than the cords.

It took forever before I felt the first loosening, a knot responding to my quivering mouth. But then it came faster. The second knot seemed easy. At last Mac's right hand was free.

"Right," he grunted. "I'll have us out in a minute." He reached across to his other hand, with the loose bonds still on his right wrist. As he worked on his left hand, I craned my head around to watch for the return of Van Lyle.

"Getting it," Mac said at last. But his legs were still tied when I saw the door opening.

"No more," I whispered. The two of us sat frozen as Van Lyle walked again in front of us. Mac had left the cords around both wrists, and his forearms rested on the arms of the wheelchair. It looked as though he was securely tied, hand and foot. As for me, I was still taped like a trussed chicken, arms and legs.

"So, Jeanie," Lyle said. "You don't know if you'll ask for mercy, eh? Well, I ought to tell you that Dr. Griss left the final steps in my hands. How you go is completely up to me—and to you. Quick and easy, or slow and hard. Do you think you can persuade me to be nice to you? Let's find out."

He moved behind me and pushed my wheelchair forward. Then he came past me, to the panel that controlled the great double doors.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Take a look at this, Jeanie."

The doors slid open. Pungent fumes rose from the pit that was revealed before me, searing my throat. I saw a great pond of dark liquid, just beyond the doors and a few feet down.

"Ten seconds in there," Lyle said conversationally, "and you'd be choking. Half a minute, and your skin would start to peel off. But we don't have to rush everything like that. You can be dipped in and out like a bit of beef fondue—a toe or a foot or a hand at a time, as often and as slow as I choose to do it. Would you like to beg now, Jeanie? Or would you like to take your trial dip this very minute? Or maybe you would like me to be really merciful, and knock you unconscious first?"

I could hardly move, but I jerked and screamed and writhed against the tapes, making as much noise as I possibly could. Lyle laughed delightedly. Between us we were making a frightful din.

How much of my screaming was genuine panic? I don't know, but I'm sure a good deal of it was, because my chair was rolling steadily closer to the edge without being pushed. There was a small lip at the very brink of the pit, but it might not be enough to halt the forward motion.

I was an arm's-length from death—the chair nearing the edge—Van Lyle walking by my side and peering at my face, savoring my expression.

Then, from behind—at last—came the squeak of unoiled wheels.

Before Van Lyle could move, McAndrew was on him. Mac had freed his legs and was out of the wheelchair. Smarter than I would have been, he came forward in one silent rush, pushing the wheelchair in front of him like a ram. The edge of the seat caught Lyle behind the thighs at knee level. He fell backward into a sitting position. Before he could cry out he was at the edge. He and the chair went right on over. There was a scream and a great splash. McAndrew halted at the brink, staring down.

"Mac!" I screamed. I was still rolling.

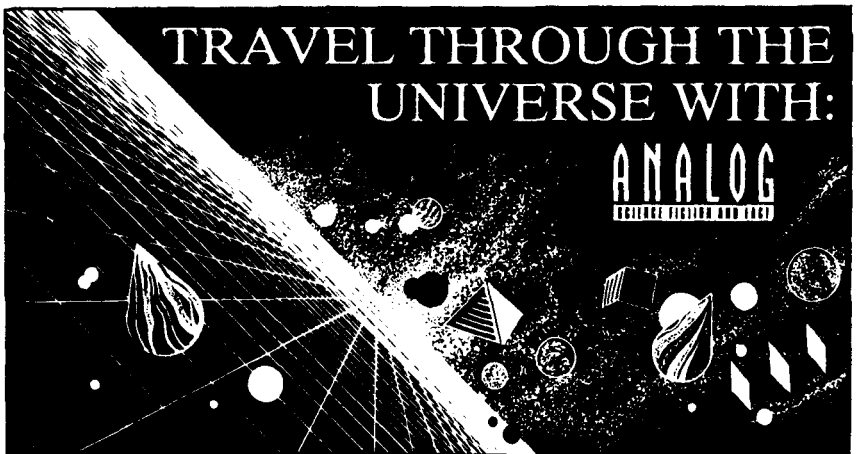
He half-turned and threw himself in front of my wheelchair, stopping it with his own body. At the very edge, we both peered into the pit.

Lyle had gone in flat and face-down. He rose to the surface in a cloud of steam, screaming and clawing at his eyes. As we watched, his hair and skin began to smoke and frizzle. His arms waved and thrashed down on either side of him. Then he went under again.

The vat was more corrosive than Lyle had suggested. Twice more he rose, howling in agony. But the liquid must have reached his lungs. By the time he went under for the last time he was silent, a dark-green mass that was already losing its human form.

And while Van Lyle was dying, McAndrew kept tearing at the tapes that held me. I think it was the only thing that kept him from plunging in himself to try to help.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



Each issue of Analog Science Fiction & Fact blazes the way to bold new discoveries. The stories in Analog begin with a scientific base that stretches beyond your imagination. Start your subscription today and travel to distant places and times where fiction becomes fact.

Subscribe today and save over 28% off the basic price.

- ❑ Please send me 18 issues for $29.95-I save 28% off the basic price.
- ❑ Please send me 12 issues for only $20.97.
- ❑ Check enclosed
- ❑ Please bill me

HUSC-6

Name_____

Address_____

_____

Mail to:
Analog
P.O. Box 7060
Red Oak, IA 51591

Outside US & Poss. 12 for $25.97, 18 for $38.75. Price includes GST.

Please allow 6-8 weeks for delivery of first issue.

All foreign orders must be paid in advance in US funds.

We publish 2 double issues, in January and July. Each double issue counts as 2 issues towards your subscription.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The tapes were strong, and Mac's hands were trembling. It was two more minutes before I could stand up, advance shakily to the brink, and peer down into the choking green fumes. I saw a dark vat, with sluggish ripples moving across the surface. About ten feet away from the edge floated an amorphous rounded lump.

"Don't look," McAndrew said. "He's dead."

"Of course he is. But it was his own damned fault."

I don't know how angry I sounded, but Mac winced. "Come on, Jeanie," he said. "It's over now. Let's get out of here."

"It's not." And then, when he stared at me. "It's not over. Not yet. Come on, Mac. I may need help."

I ran back, through the sequence of chambers that threaded the food production facility like beads on a necklace. Anna Griss sat at a table in the third one, calmly reading. She had just enough time to cry out in surprise before I reached her.

I lashed out and caught her with my fist high on the left cheek. While she was still reeling backward, partly stunned, I grabbed her in a neck lock.

"Come on, Mac. Help me. Back to the vats."

He wasn't much use, but it didn't matter. My own adrenaline level was so high, I could easily have carried her all the way myself. She was faintly struggling when I thrust her into the remaining wheelchair. The sticky tape that had held me was no good any more, but the cords that had bound Mac were enough to tie her.

I wheeled her to the very edge, so that the acrid corrosive vapors filled her throat and mine.

"That's Van Lyle down there." I pointed to the sodden green hulk, floating almost submerged. "You're going after him."

"Ohmygod. No, no." She was panting, shaking her head with its newly disordered hair and smudged makeup. "Don't push me over. Don't kill me. Please."

"You were ready enough to see us killed. Here you go, Anna Griss." I tilted the chair far forward, so that all that held her from the vat were her bonds. "This is what people get who mess around with me. You're dead."

I put my face close to hers. She was too frightened for tears, but her staring eyes were watering in the poisonous fumes.

"Say your prayers," I whispered. "Say goodbye."

"No. Oh, please." She was straining back, away from the deadly vat. "Don't. I'll do anything. Anything!"

"Jeanie!" cried McAndrew.

"Shut up, Mac. This is between me and her."

I moved the chair back a couple of feet and walked around in front of it to gaze into her eyes. "Look at me, Anna Griss. I'm not going to kill you—this time. But one more problem with you and you're dead. Do you understand? If the sight or sound or smell of you crosses my path again, ever, I'll come after you. And I'll get you. Don't ever doubt

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

that. I'll get you."

She did not speak, but she nodded. I turned to McAndrew.

"I think she has the message. If she annoys either of us again, she'll be pig feed. Come on, Mac."

"You can't just leave her! She might go over the edge."

"If she goes, she goes." I grabbed his arm. "No big loss. But you and I are leaving. Come on."

He kept turning to look at her, but he allowed me to lead him away. I did not look back.

"You wouldn't have, would you?" he said at last, when we had walked through half a dozen chambers. "You wouldn't have killed her, no matter what she did."

It was obvious what he wanted to hear. "No. I wouldn't have killed her."

"Then why did you do all that, threatening her?"

"Because I had to. I might as well ask, why did you push Van Lyle over?"

"But he was going to kill you! I didn't think—I just did it. Like you when you were screaming, going toward the pit. You just did it. What a bit of luck that was, Lyle leaving your mouth untaped! Otherwise you'd not have been able to scream, and when I ran at him he would have heard me coming."

I don't usually care what credit I get. But that was a bit too much.

"Mac," I said. "Listen to me. I'm going to tell you something about the invariants of nature. You have yours for physics and mathematics, determinants and momentum and conserved vector currents. And I have mine—the invariants of *human* nature: Love, and jealousy, and fear, and hate. Van Lyle was a cruel, sadistic bastard. He was like that when we first met him, he was like that out in the Oort Cloud, and he was still like that until the moment he died. He wouldn't change his nature. I *deliberately* told him that I wouldn't be able to beg and scream and grovel with my mouth taped. After that there was absolutely no way he'd muzzle me—no matter what Anna Griss told him to do. He *wanted* to see my terror, and hear my screams. And so I had the chance to free you."

McAndrew is an innocent soul. He was shocked silent by what I said. Finally he sighed, and muttered, "Maybe you're right. But I don't see why you did that to Anna Griss."

"I had to—because in her own way, she's no different from him. She has her own invariants: power, and control, and fear. Anna won't hold back on revenge to be nice to anyone. She'll go on, as far as she can go, until she's stopped. You and I have just stopped her. But we could never have done that by persuasion, or logic. She had to look death in the face for herself, and stare right down his black gullet."

"She could still cause us trouble. She could come after us, on Earth or off it."

"She could, but she won't. She'd like to get us, but she'll remember that pit. Anna understands power. If her people tried and failed again,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

she knows I'd come after her. The pleasure of finishing me isn't worth the risk."

"Are you sure?"

"Yes, I am. Mac, trust me. If I don't question your spinors and twistors and calibration of optical scalars, you shouldn't second guess me on Anna Griss."

"So you think it's safe to go back to the Geotron, and see how the experiments came out? I left before the results were in, you see, because of what you said to me."

He was returning to normal. Which is to say, totally abnormal.

I sighed. "Sure. We can go to the Geotron."

That sounded like the end of it, but it wasn't. We were in the submersible, cruising back to Ernesto Kugel's lab, while I wondered what story I was going to tell. Probably I'd say nothing. I'd pretend I had a nice pleasant tour, and leave it to Anna Griss to tell it otherwise.

Then McAndrew started up again.

"Jeanie. You really *wouldn't* have killed her, would you? No matter what."

I reached out and stroked his cheek. "Of course not. But can we drop it now? You and I ought to be celebrating our survival. Maybe we ought to act on Ernesto Kugel's suggestion—his first one."

It came out as flat and artificial as it sounds, and it didn't fool McAndrew for one moment. He gave me a wary, weary look, and leaned back in his seat. But it did accomplish my objective. It shut off a line of conversation that I was afraid to pursue.

Because one thing I've learned in life is that a person never knows her own invariants. I *thought* I knew the answer to McAndrew's question, but I wasn't *positive*. That terrible rage, the all-consuming fury that I felt when Anna Griss was poised on the edge of the pit . . . if she had been a little more resistant, just a little tougher and more defiant—then who knows what I would have done?

Not I.

But one thing I did know for sure. I was not going to discuss that sort of thing with McAndrew. Ever.

He's a dear, and he's super-smart, and in almost every way I can think of he is wonderful. But he's also like most people who spend their lives studying the nature of the Universe.

He can only take a tiny little bit of reality. ■

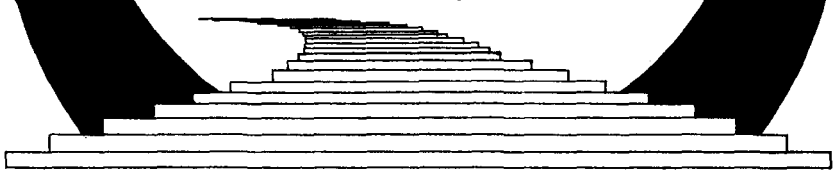
MOVING? If you want your subscription to *Analog* to keep up with you, send both your old address and your new one (and the zip codes for both, please!) to our subscription department; Box 7058, Red Oak, Iowa 51591.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Asimov's
SCIENCE FICTION

ENTER ANOTHER DIMENSION.

Explore worlds of imagination with stories by Roger Zelazny, Robert Silverberg— and, Connie Willis



SUBSCRIBE NOW AND SAVE OVER 28% OFF THE BASIC PRICE

❑ Please send me 18 issues of ASIMOV'S SCIENCE FICTION for only $29.95--I save over 28% off the basic price.

❑ Please send me 12 issues for only $20.97.

OR CALL 1-800-333-4108

☐ Payment Enclosed ☐ Bill Me

☐ Charge (Circle one) MasterCard VISA

Name _____

Address _____

City _____

State _____ Zip _____

Card# _____

Exp. Date _____

Signature _____

Outside US & Poss 12 for $27.97, 18 for $39.97. (cash with order US funds). Price includes GST.

Mail to: **Asimov's**
P.O. Box 7058
Red Oak, IA 51591

We publish two double issues,in April and November.
Each double issue counts as two issues towards your subscription.

MUSC-0

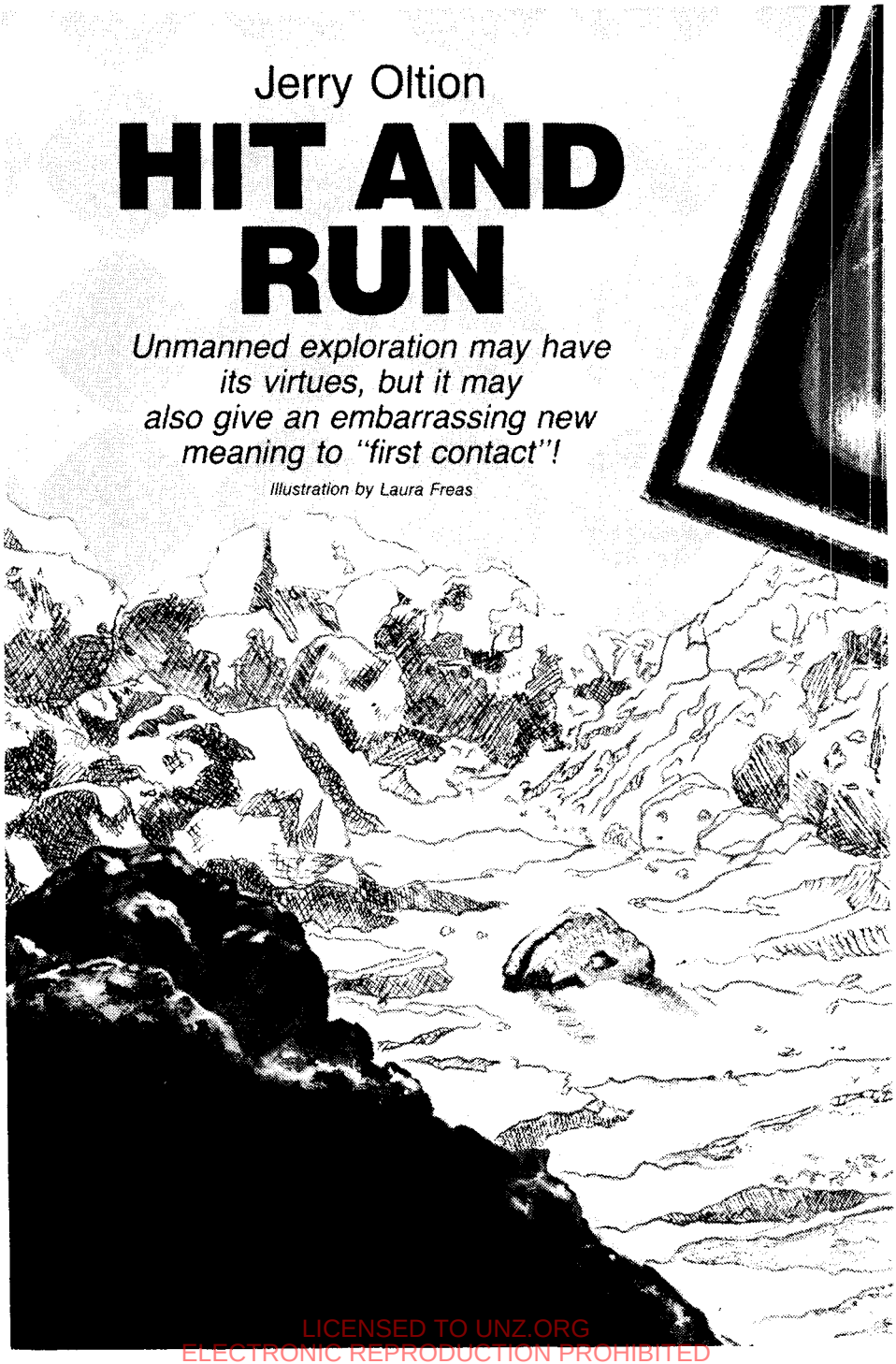
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Jerry Oltion

HIT AND RUN

Unmanned exploration may have its virtues, but it may also give an embarrassing new meaning to "first contact"!

Illustration by Laura Freas



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

After three nights on the job, Doug stopped seeing red. It took him a while to notice, but when he realized the Martian landscape on the computer screen before him looked just like a view of an Arizona desert, he sat up with a start. Was something wrong with the monitor? Or—the thought horrified him—was something wrong with the rover?

When he looked away from the screen, his hand already reaching for the phone to call Dr. Kelley, he realized the problem was in his own eyes. The office walls, normally white, now seemed blue-green, like the inside of a hospital operating room. He glanced around for something he knew was red—there, on the other computer desk at right angles to his own, a *Time* magazine cover—and felt relieved to see that it, too, looked washed-out, more pink than red.

He looked back to the monitor, where the rock-strewn floor and layered canyon walls of the Vallis Marineris crawled slowly by. In the upper right-hand corner a five-digit event number advanced once every ten seconds. That number could be used for reference if anything interesting came into view, but so far Doug's note pad was empty. The rover was making good time, though, nearly two kilometers an hour along the ancient riverbed. It was about to encounter a rounded, half-meter high rock a little to its right; any minute now the onboard obstacle detection program would steer it to the left to ensure a miss.

Doug felt the urge to do it himself, but with Mars over ten light-minutes away, his command would get there far too late. In fact, the rover had no doubt already passed by the rock, steered back onto its original path, and driven on.

He stood up and crossed to the window, hoping to find something there to reset his color vision, but the only light outside came from the orange sodium-vapor lamps in the parking lot. He turned away, deciding to roam a little under the hallway's fluorescent lights, but a glance at the monitor on his way past made him stop. Hadn't the rover noticed the rock yet?

After a moment he realized yes, it had. The camera image slowly panned right as the rover veered left. It rolled on four big balloon tires, each individually driven and steerable, but even so its progress was maddeningly slow, the result of both cautious design and solar batteries on a planet half again as far from the Sun as Earth. Doug watched a moment more to make sure it was really turning, then stepped out into the hallway to bask in the blue glow of the fluorescents.

It was hard to believe he could be getting used to the job so quickly. When Dr. Kelley had first asked him if he wanted to baby-sit the Martian rover through the night—currently early morning in the Vallis Marineris—he'd nearly kissed her in excitement. The university had designed and built the rover before he'd even gotten out

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of high school, but he'd watched all the news reports and even built a working model of it, complete with a time-delay in the controller to simulate speed-of-light lag between Earth and Mars. He'd been afraid the whole mission would be over before he made it anywhere near the actual project, but the years of delays in launching it and the months in transit had added together to put him in grad school by the time it landed. Now, two months into the planetside phase of the mission, here he was with his hands on the controls.

Long distance controls, to be sure, with a twenty-minute time lag for round-trip signals and an onboard computer doing most of the driving; but for eight hours a day he was the sole person responsible for overseeing the rover's progress. Doug sighed as he walked down the hallway, tilting his head upward so he could watch the overhead lights glide past. Somehow the reality hadn't quite lived up to the anticipation.

The rover had been driving along the Marineris valley floor for weeks now, and the only unusual thing it had found had been a few extremely slow-growing microbes in the soil and some anomalous grooves in the sand that might have been from wind-blown debris. It was getting into the deepest section of the valley now, and consequently the area of highest air pressure and greatest likelihood for finding higher life-forms—according to some theories, anyway—but if the previous months' discoveries were any indication, then Doug doubted if he'd see anything more exciting than a few frost lined meteor craters.

The hallway made a long loop through the building, with office doors opening on either side of it all the way around. Doug made the entire circuit, stopping to say "Hi" to Zaffar, a physics grad student staying late to work on his project. He stopped again to use the bathroom and to splash some cold water on his face, then headed back to his own office.

When he got there he was relieved to find that the monitor once again showed him the familiar red-tinged Martian soil and sky he'd become so accustomed to. The rover was once again rolling steadily along the riverbed, bumping gently over rocks too small to worry about going around.

Doug tapped the function key on the computer keyboard that accessed the scroll back buffer, the segment of the video signal the computer kept in memory so the operator could examine the most recent few minutes of footage without interrupting the tape recording. The image reversed, canyon walls sweeping forward, bouncing and twisting at high speed as the computer backed through the data stream. Doug let it get well beyond the rock, then ran it forward again at four times normal speed, just so he could say he'd watched every minute of the rover's journey. It wouldn't do to be accused, months

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

later when someone else got around to watching the footage, of missing something important.

There came the rock, a lumpy, pockmarked oblong with a split down the middle. The rover swerved left to miss it. It evidently miscalculated, because the rock was still in its path, so it swerved a little more. But the rock was *still* in its way. Doug felt the hair rise on the back of his neck. The rock had moved. It was still moving, jiggling and lurching along in fast-forward, and the rover was still turning to avoid it. He watched helplessly as the two came together, as inevitably as two pedestrians on a sidewalk. The rock disappeared beneath the camera's angle of view, and a moment later the picture jounced upward, then down, then up again as the rear tire also hit the rock. The rover teetered for a moment, then fell back down onto its wheels. Dust rose into camera range for a moment, then settled in the thin air. After a moment, during which it no doubt performed a systems check, the rover rolled onward.

Doug froze the image, backed it up, and watched it again at normal speed. The rock—no, the rocklike Martian—didn't have any feet that Doug could see. It simply scooted along the ground, its bumpy surface—a shell?—rolling slowly from side to side as it moved. The edge of the shell rose above the dirt for a moment, but the Sun was behind the creature and Doug could see no detail beneath it.

He switched back to the incoming signal. The rover rolled blithely onward, unaware that it had just run over the first Martian ever discovered.

Doug fumbled at the keyboard, accessed the command menu, picked STOP, then changed his mind and sent REVERSE COURSE. He switched over to the scroll-back image and noted the event number at the top of the screen just after the rover had hit the Martian, then told it to return to that spot. In ten minutes the rover would receive his command, and in another ten he would see it respond. Then it would take another twenty minutes or so for it to retrace its path, forty minutes of uncertainty while the Martian gasped its last breath or bled to death in the sand.

Doug picked up the phone and dialed Dr. Kelley's home number. It rang half a dozen times before her sleepy voice answered, "Yes?"

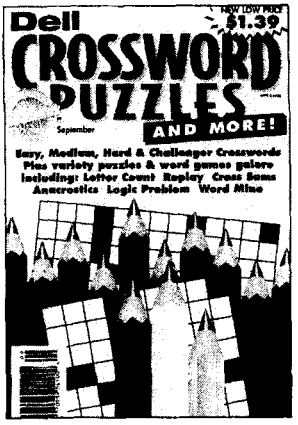
"Dr. Kelley, this is Doug." His voice cracked; he swallowed and tried again. "Sorry to call you so late, but, well, I've got some good news and some bad news."

The rover had just rolled within sight of the spot where it had run over the Martian when Dr. Kelley's car pulled into the parking lot with a screech of tires. Doug heard her door slam, fast footsteps up the walk, a moment's silence, then the main door banged against the stop and those same fast footsteps came like machine-gun shots down the hallway. She swept into the office,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

CLUE: **IT WILL TANTALIZE AND CHALLENGE YOU EVERY MONTH**

ANSWER: **DELL CROSSWORD PUZZLES**



Each issue is packed with Crossword Puzzles from easy to challenger; Variety Puzzles such as Cross Sums, Anacrostics, Kriss Krosses and much more!

Subscribe today!

❑ Yes, send me 24 issues for only $29.94.
❑ Send me 12 issues for $15.97.
❑ Payment enclosed. ❑ Bill me.

CALL TOLL FREE 1-800-234-2402

or

Mail to: Dell Magazines, PO Box 55079, Boulder CO 80322

Name_____

Address_____

City/St/Zip_____

Please allow four to six weeks for your first issue. Outside U.S. and Poss. add $3.00 per year. U.S. funds only.

5ANA

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

already throwing her coat toward the book-filled chair by the door, and pushed her sleep-tousled brown hair out of her eyes as she came around the desk to stand behind Doug.

"All right, let's see this Martian of yours," she said.

"It's gone," said Doug. He pointed at the screen. The rover had rolled up to the spot where he'd told it to stop; just in front of it were the tracks where it had swerved to miss the rock, but now nothing stood in its path.

"Oh no you don't," Dr. Kelley said. "You didn't drag me down here at three in the morning and expect to get away without producing an alien. I want to see eyestalks and tentacles. *Now*."

"It looks like a lumpy turtle," Doug said. "Well, actually, it mostly looks like a rock. It's still on the tape, but what I mean is it's not there now. It crawled away."

"Uh huh."

"Here, let me show you." He had already cued up the segment before she arrived; now he pushed the "go" key and played it for her.

"It's fake," she said after about three seconds. "I recognize that rock."

"What?" Doug froze the image.

"That rock. It's 'Big Joe,' the one Viking 1 almost landed on in Chryse back in '76. I recognize the shape." She turned away. "I'm not amused, Doug."

"Wait a minute; I didn't do anything. I was just watching the monitor like I'm supposed to."

She turned and cast him a look that nearly melted him into the chair. If he hadn't successfully overcome a two-year crush on her in his undergrad days, he probably would have died on the spot. But he managed to stammer, "I m-mean it. I didn't do it. Whatever it is you think I did."

"I think you—or somebody anyway—took a picture of 'Big Joe,' made an animation of it, and fed it into our data stream somehow."

"How could they do that?" Doug asked, then suddenly he realized how. "Hold on. I stepped out of the room for a minute just before it happened. Somebody must have snuck in while I was gone and dumped the animation directly into the scroll-back buffer."

"What were you doing out of the office?" Dr. Kelley's voice had an accusing edge to it.

Doug took a deep breath, about to go into a long-winded excuse involving color saturation and fluorescent lights, when he suddenly realized he had a much better one that was every bit as true. "I had to go to the bathroom," he said.

"Oh." Dr Kelley looked at the monitor again, still showing the frozen image of the rock and a faint trail in the sand behind it as it scooted into the rover's path. "Let me try something," she said.

Doug gave up his chair. Dr. Kelley sat down in it and tapped on the keyboard, backing up the actual videotape to a point well before the encounter with the "rock." She ran it forward again, saying, "We should

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

be able to spot the splice. Whoever did this had to have done it ahead of time, and they couldn't have known what the terrain would look like when you got up. There'll be a jump when their footage takes over."

Doug felt a wave of relief wash over him. She'd said "they," not "you." He watched over her shoulder while she ran a couple minutes of footage at double speed, but there were no obvious splices.

"How long were you gone?" The accusing tone was back in her voice.

Doug shifted uneasily from foot to foot. "Only a couple of minutes. I swear! And—wait a minute. The rover was starting its turn when I left. I waited until I could see it turning before I went. And I was in here continuously before that, ever since I took over at midnight. They couldn't have simulated three hours of canyon."

"Hmm. Not easily, anyway." Dr. Kelley pursed her lips in thought. "Where's the rover now?" She didn't wait for Doug's answer, but pressed the hot key to put the incoming image on screen. The rover still waited where Doug had told it to stop.

"I sent it back," he said. "That's the spot where it happened. See that big dent in the sand? Right where the wheel track disappears for a meter or so? That's where it climbed over the—whatever it was. And that groove there, the one that goes *over* the other wheel track, that must be where the thing crawled off after the rover ran over it."

"Hmm," Dr. Kelley said again. She pushed more keys, calling up a screen full of mission status information. "It says here we're still receiving a direct signal. So unless somebody has tapped into the line coming from the antenna. . . ."

"We could check that easily enough," Doug said.

"Oh?"

Eager to prove his worth again, he said, "Sure. We're getting the signal straight from geosynchronous orbit, and the satellite there's getting it straight from Mars, so if somebody's giving us bogus data then it would have to be coming from right here in this building. If I go up to the antenna and move it off-satellite for a minute, we should lose the picture. If we don't, then we know we're watching a simulation, right?"

"I could just move the antenna from here," Dr. Kelley said.

Doug shook his head. "The simulation could be set up to spot the command. If we do it by hand, just break the signal at the source, then we'll know for sure."

She thought for a second, then said, "But if this is *your* joke, you could—"

"You've known me since I was a freshman. Would I risk my entire career for a stupid joke like this?"

She considered his question for a moment, then said, "No, I don't suppose you would. OK, go do it."

It was cold on the roof. Doug

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

propped the door open with the rock they kept there for that purpose, then walked across the crunchy gravel rooftop to the antenna. It was a regular satellite TV dish; the university had used as many off-the-shelf items for the project as it could. Doug took hold of the edge of the dish with his left hand and pulled the linch pin holding the motorized positioning arm in place. The arm dropped a couple of inches, freeing the dish to move, which Doug let it do. He swung it back and forth a few times from horizon to horizon. The software downstairs would be going crazy trying to reacquire the signal—or it would if they'd been watching a real picture.

Doug shivered, only partially from the cold. He sincerely hoped someone was playing a joke on them. To be the man at the controls during the first interplanetary hit-and-run accident was not the sort of thing he wanted to be remembered for.

He hooked the motor drive's arm back onto the dish, then stood back while the software moved the antenna back and forth in search of the signal. After twenty seconds or so it found it again; the dish stopped in the same position it had been in when he had stepped out onto the roof.

That alone told him all he needed to know. If someone had replaced the incoming data with a simulation, then the program wouldn't have been able to realign the antenna on the satellite.

When he got back to the office, Dr. Kelley's expression confirmed his suspicion. "It's real," she said without looking up from the keyboard, where she was picking a list of commands off a menu. "I'm sending the rover off after the Martian. I don't know if its pattern recognition algorithm is good enough to follow the tracks, but we'll try it."

"So we really did run over something alive?"

"Looks like it." She looked up, grinning now. "Don't sweat it. In Mars's gravity, the rover only weighs about twenty kilograms, and it's on those big balloon tires to boot, so I doubt if it hurt the Martian any. It crawled away, anyhow. We'll know how bad off it is before too long; it didn't look like it moved half as fast as the rover even before it got hit."

"You're not mad at me?"

"Are you kidding? You discovered the most complex organism on Mars yet, Doug! And you're *my* student. I won't even have to steal your thunder like most advisors do; there's plenty here for both of us."

"Gosh, thanks," he said sarcastically.

"Oh, come on, cheer up. Even if the rover squashed it flat, ours wouldn't be the first project to kill a Martian."

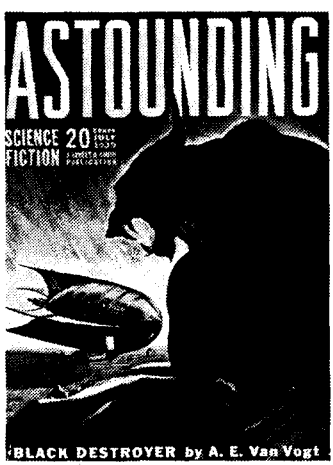
Doug sat down on the edge of the desk beside hers, the one holding the spare computer. "What do you mean?" he asked. "This is the first one anybody has seen, isn't it?"

"The first live one," Dr. Kelley said. "But I wasn't kidding when I

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A TREASURE FROM THE GOLDEN AGE OF SCIENCE FICTION!

A Hardbound Copy of the July 1939 Edition of ASTOUNDING!



Critics mark this issue as the first "great" issue edited by John W. Campbell, Jr. It contains the first published story, "Black Destroyer," by A.E. van Vogt and the first story by Isaac Asimov to be published in **ASTOUNDING.**

This hardbound facsimile of the July 1939 issue also contains an Epilogue in which A.E. van Vogt, Asimov, and Rocklynne comment on their own work, their feelings towards **ASTOUNDING**, and especially their relationships with John W. Campbell, Jr.

This classic collector's item is now only **$9.95** but act fast, supply is limited. Please send my 1939 **ASTOUNDING** to:

Name_____

Address_____

City_____ State_____ Zip_____

Send check or money order (No COD's) to: Analog, P.O. Box 40, Vernon, NJ 07462
Canadian or **Foreign** orders add **$5.00.** Allow 6-8 weeks for delivery.

MUIA-2

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

said I recognized the shape. Viking 1's 'Big Joe' has to be one of 'em, too. The lander must have come down right over the top of it, or at least close enough to fry it with the retrorockets. It's dead, anyway; Big Joe was still in exactly the same position when the cameras stopped working over five years later."

"Maybe the Viking scared it to death," Doug said.

"Who knows." Dr. Kelley brought up the segment of video showing the collision and ran it again. At normal speed, the rocklike Martian moved about as fast as a crawling baby, one side of the split down its middle moving forward a few centimeters, then the other. "It may be running for its life for all we can tell."

She shifted back to the real-time signal, but the rover was still waiting for her command.

"I wish we'd had both cameras going so we could see if it picked up speed after we hit it," she said. "I turned on the second one and set it to watch behind us while we try to track the thing down. We'll have to shut it off in an hour or so or we'll run out of battery power, but for now I want to see as much as possible."

"Good idea," Doug said, glad she was there to make the decision. Anticipating her request, he switched on the backup system, and when the computer finished booting he set it to receive the rover's signal, selecting camera two's input. He also powered up the system's VCR and made sure it had a fresh tape for posterity.

They waited a few more minutes, then the rover suddenly began to move. It rolled forward, turning to the right as it did, lining up with the tracks the rock-creature had left and moving off in slow pursuit.

"The chase is on," Dr. Kelley said.

A minute or so later—when her next instruction reached the second camera—the backup monitor filled with the view behind the rover, showing its tracks straddling the Martian's.

"Got it," Doug said.

They watched in fascinated silence while the rover rolled along on its new course, heading into a narrow side canyon off the main Marineris valley. Since the Martian had almost an hour's head-start on them they didn't expect to see it again soon, but just a few minutes after the rover entered the steep-walled canyon they spotted it straight ahead, retracing its own route toward them.

"Oh, no!" Dr. Kelley frantically jabbed at the keyboard, sending the order for the rover to stop, but Doug knew it was too late. With the speed-of-light lag between the two planets, if it was going to hit the Martian again it probably already had.

"It'll try to turn again," he said. "If the Martian doesn't move in front of it this time too, the rover will go around."

"And then keep on following the tracks," said Dr. Kelley. "Damn! We've got to tell it to follow the Martian." She used the video edit-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ing controls to zoom in on the approaching creature, captured a segment, and rebroadcast it to the lander's computer with instructions to follow that shape. Then she backed up to the first encounter and captured the side view and sent that, too, saying, "If the creature is still in view when the rover gets the signal, it should be able to lock onto it."

"And run over it from behind," said Doug.

"Hmm. You're right. OK, I'll tell it to let the Martian have a five-meter lead." She tapped at the keyboard again, sending more instructions.

On the monitor, the rover continued its slow crawl toward the creature, but the creature stopped about twenty meters away, then shuffled around in a half-circle and took off deeper into the side-canyon.

"Whew," Dr. Kelley said. "All right, now if we just don't overtake it before the new orders get there, we're all set." She sent another video clip, this one of the creature from behind, just to be sure the rover would recognize it.

It came close. The rover was less than a meter away from the Martian, and the Martian was slowing down, when the rover suddenly slowed still further and let the Martian pull ahead.

"Ha, we did it!" Dr. Kelley said. She reached out and grabbed Doug in a comradely hug. "Yeah! We're famous!"

There came a soft cough from the doorway. Doug and Dr. Kelley turned to see Zaffar, the physics grad student who had also been working late, standing there. "You have found something interesting with your Mars rover?" he asked.

Blushing but undaunted, Dr. Kelley released Doug and waved toward her monitor. "You better believe it. Come look at a genuine Martian."

Zaffar came around the desk to stand behind her.

"Here," she said, pointing. "The rover ran over it a couple of hours ago, and now we're following it."

"You mean 'came across,' don't you?" Zaffar asked. He was from Saudi Arabia, but his English had always been near perfect.

"No, she means 'ran over,'" said Doug. He explained what had happened. "Now we're just following it to see if it's all right. And to see where it goes, I guess."

"I suppose that makes sense," Zaffar said, his voice betraying doubt.

"What?" Doug asked.

"Well, in my country, following the victim of a hit-and-run accident back to his home would not be a very good idea. You'd probably have your car set on fire—and you with it."

"This isn't your country," Dr. Kelley said. "This isn't even your planet. Besides, fires don't burn on Mars. There's no oxygen."

"There are other ways to destroy a vehicle," said Zaffar. "How do you know this Martian cannot throw something?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"It's got no appendages," Dr. Kelley said.

"None that we know about, anyway," amended Doug.

"It doesn't have any," Dr. Kelly insisted. "Look at the tracks it leaves behind: just two continuous grooves."

Zaffar was between Doug and Dr. Kelley's monitor; Doug glanced over at his own to look at the creature's tracks again. Sure enough, there were just two grooves, leading all the way back to—

"Uh, Dr. Kelley? We've got company." Doug leaned aside so she could see his monitor, where at least a dozen more rock creatures had slid in behind the rover and were now advancing on it from the rear. They all looked like the first, but some were nearly twice its size: over a meter tall.

"Uh-oh," Dr. Kelley said. "Those look like angry parents. Arms or no, maybe you were right, Zaffar. I think maybe it's time to get the heck out of Dodge." She turned back to her own computer and accessed the command menu. "What do you think," she asked, "should we try to go through 'em, or should we high-tail it farther up the canyon and try to outrun 'em?"

"They'll have us cut off before we can turn around," Doug said. "We have to go on."

"You're right." Dr. Kelley sent the rover back up to full-speed, then increased to half a meter the size of obstacle it would climb over instead of swerve around. "It went over that thing once: we'll let it go over it again," she said.

They watched the scene unfold at a maddening snail's pace; the rover continuing to follow its prey at a safe distance, the Martian slowing still more when it realized it was safe, and the ones behind drawing closer and growing in number every minute as more of them joined the chase.

"Move!" Doug urged the lead Martian. "What are you waiting for?"

"For the others to catch up, of course," Zaffar said. "It knows you cannot escape."

"It doesn't know anything," Dr. Kelley said. "I'd be surprised if it had the intelligence of a flatworm."

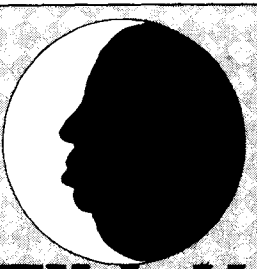
"It understands how to ambush your rover. It obviously led you into this canyon on purpose, and it has just as obviously communicated with others of its own kind, who are helping to remove this threat from their midst."

Dr. Kelley shoved her hair back out of her eyes. "You're anthropomorphizing. It's more likely that they're all attracted by the noise the rover makes, or the heat it puts out."

"Maybe." Zaffar said. They watched a few minutes more while the boulders advancing from behind formed a double line spreading across the width of the narrow canyon, and the one in front slowed almost to a stop.

Then the rover received its new instructions and surged ahead. The Martians reacted immediately. The one in front turned aside, and the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



FULFILL YOUR NIGHTMARES

Enjoy chilling tales of mystery and suspense. Sometimes humorous, sometimes nightmarish. But always an intriguing puzzle.

ALFRED HITCHCOCK MYSTERY MAGAZINE

AND SAVE 25%

❑ Please send me 18 issues of **ALFRED HITCHCOCK MYSTERY MAGAZINE** for $28.97--I save 25% off the basic price.
❑ Please send me 12 issues of **ALFRED HITCHCOCK MYSTERY MAGAZINE** for $19.97--I save 22% off the basic price.

Mail to: ALFRED HITCHCOCK
P.O. Box 7055
Red Oak, IA 51591

Name_____

Address_____

City_____ ST_____ Zip_____

OR CALL 1-800-333-3311
☐ Payment Enclosed
☐ Bill Me
☐ Charge (Circle One)

MasterCard VISA

Card #_____

Exp.Date_____

Signature_____

Outside U.S. & Possessions, 12 for $27.97, 18 for $39.97 (Payment with order, U.S. funds). Please allow 6-8 weeks for delivery of your first issues. Includes GST.

We publish two double issues, in June and Mid-December. Each double issue counts as two towards your subscription.

MUHS-6

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ones following speeded up. The bigger ones were actually faster than the rover; they advanced steadily, closing with it even as it passed the one it had been following and negotiated a tight turn around a projecting shoulder of the canyon wall.

Directly into the waiting mob. The Martians behind it were nothing compared to the scree-field of animated boulders waiting around the bend. The rover, its obstacle avoidance program set only for half-meter rocks or greater, drove straight toward the Martian directly in front of it, which could have been an identical twin to the one it had been chasing. Dr. Kelley didn't even try to send commands; she just sat and watched as the rover struck it with its left front tire, bounced into the air, tilted, then bounced again when the rear tire hit. The rover teetered on two wheels for what seemed like eternity, still rolling forward as well, then it struck another rock and slowly fell over on its side.

Dr. Kelley groaned. The picture on her monitor swirled into static. The one on Doug's filled with snow as well, but through it they could still see a picture.

"The antenna's on the ground," Doug said. The rover used an omnidirectional whip antenna rather than a dish, but even so, lying horizontally on the ground had cut its signal strength. There was still enough picture, though, to see the Martians gathering in a pack around the overturned rover.

One of the largest ones slid up to the edge of the instrument platform, then the crack in its surface opened and a long, sinuous arm tipped with half a dozen pinchers reached forward and with surprising strength wrenched one of the rover's mineral analysis spectrometers completely free of its mount. It tilted it this way and that, obviously studying it with some sort of concealed eyes or similar sense organ, then passed it to one of the other Martians. It reached forward again and pulled loose the bronze plaque that had been bolted to the rover's side, the one with the drawings of Earth and Mars and the path the Viking spacecraft had taken to get from one to the other. It had been put there more out of tradition than out of any expectation that alien eyes would ever see it; but other exploratory spacecraft had all had mission plaques on them, so the university had put one on the rover as well.

The Martian held the plaque aloft, then turned partway around, as if looking in another direction. Toward Earth? Doug wondered.

The other Martians had extended their arms now, too, and some held short, straight-bladed knives. Others held less familiar objects, but all were obviously artificial.

"There's your proof of intelligence," said Zaffar, tilting his head to the side to see the picture upright. "And proof of trouble, too. They found the license plate."

"So what?" Dr. Kelley said. "What are they going to do, call the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

police?"

"Maybe they will take care of the matter themselves. They seem to be very resourceful."

Doug said, "Wait a minute, we're talking rocks here. Rocks with arms, sure, but—"

"They have tools. They communicate, and they cooperate. We have no way of knowing how smart they are. They might have a civilization even older than ours, for all we know."

"Oh, give me a break," Dr. Kelley said. "You don't seriously believe a bunch of rocks are going to mount an expedition to Earth, do you? To take vengeance for a—a traffic accident?"

"I have no idea what they might be capable of doing."

Dr. Kelley opened her mouth to reply, but her response died on her lips, for the Martian leader was holding the plaque aloft and shaking it. The Martian backed away from the rover, turned around, and pushed its way through the mob, still waving the plaque. The others began to wave their knives more vigorously and followed. Then, like a slow-moving, horizontal avalanche, they all headed back out of the valley.

"They look like a lynch mob," Doug whispered.

Now that the rocks were no longer the prime subject, the rover's one remaining camera focused on the canyon wall, which they could now see was pocked with caverns. However, instead of the dark interiors of natural caves, these were brightly lit and filled with glistening shapes that might have been machinery or alien works of art or something else entirely.

"I think I had better get back to work," said Zaffar, stepping toward the doorway.

Dr. Kelley sniffed. "Oh? What's so important that you can't stick around and offer more of your . . . unique insight?"

"Particle beam research."

"Particle beam research?"

Zaffar turned back to face her. "That's right. For an antimissle defense system. I don't know how advanced those Martians are, but your rover tracks will lead them straight back to the lander, and they're going to find a working rocket engine when they get there. If these guys are half as smart—or as angry—as I think they are, we may be hearing from them soon." ■

Customer Service or Subscriber Assistance. Please direct all changes of address and subscription questions to. *Analog Science Fiction and Fact,* P.O. Box 7061, Red Oak, IA 51591

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

GOAT ISLAND

L. Sprague de Camp

Humans like to think of themselves as exempt from the laws of ecology—but of course we aren't!

The first time that Catherine and I visited Egypt, in 1958, our hosts, two Egyptian upper civil servants, took us to call upon Sayyid Mari'i, the Minister of Agriculture. (That may not be the correct translation of his title, but it comes close enough.) There we were attended by a squad of black Nubians in archaic Oriental costume, from fez to baggy pants. Present also were some younger Egyptians, whom these higher-ups kept around as gofers.

Mari'i, a lean man with a gray mustache, came in wearing a sweater and smoking a pipe. He radiated the *persona* of a traditional English country gentleman. Over thimblefuls of super-strong coffee, he asked our impressions of Egypt. Catherine told of our touring that day, viewing Pyramids and other features. What struck her most, she said, was the sight of girls, barely into adolescence, lugging babies on their hips. She thought it a shame that they had no means of deferring motherhood until they were old enough to handle it.

"Exactly!" Mari'i broke in. He told us his plans for sending traveling clinics around the country to give these child-brides contraceptive information.

A gofer spoke up: "But, sir, wouldn't birth control be against the Qur'ân?"

Catherine said: "There is *nothing* in the Qur'ân about birth control!"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Exactly!" said Mari'i. Catherine had never read the Holy Qur'ân. Since it was compiled about A.D. 600, after Muhammad's death, from what people remembered of his sermons, she was safe in making the statement.

Later, one of Mari'i's civil-service colleagues said to us: "Mari'i sends his people around to lecture the Egyptian farmer on the advantages of limiting one's family, and when they have gone the peasant buys another wife and breeds more children."

Mari'i, however, persisted and slowly won wider approval. I recently read in the *New York Times* that the Egyptian government, like those of China and Japan, is at last vigorously pushing so-called "family planning."

Such a policy is even being pursued in Mexico, where it has caused problems for the Catholic clergy. The present papacy is firmly opposed (by theological arguments going back to Aristotle through Thomas Aquinas) to contraception save by the impractical and ineffective "rhythm method." On the other hand, I read that some Mexican clerics, aware of the burden of overpopulation on their country, turn a blind eye to the government's contraceptive propaganda. The Mexican birth rate, although lower than it was, is still well above the level needed to keep the population stable.

The United States has recently followed the opposite policy, withdrawing support from organizations, such as the Planned Parenthood Federation, that promote contraception in overcrowded countries and refusing cooperation with population-limiting efforts. It has been said that this policy was part of a deal between Ronald Reagan and Pope John Paul II, in 1982, to work jointly for the overthrow of the Polish Communist government.[1]

To understand the alternative, consider a hypothetical case. Suppose there is a small, isolated island with a normal plant cover but no significant animal predators. On this island we place a herd of goats and leave them. The goats do what most organisms do: they eat and they breed. They eat the greenery; and they copulate, give birth, and rear young. Since there are no predators, the goats' number steadily increases. Soon the expanded population is eating the vegetation faster than it can reproduce itself.

The goats, however, have no drive to limit their numbers. They go on multiplying and eating the remaining plants faster and faster. The day inevitably comes when the last blade of grass or the last bit of weed is eaten.

Then all the goats starve to death, leaving the island nothing but a patch of sand or rock, with no life save perhaps insects and spiders. If the island had harbored a unique species of plant, it would be gone for good, no matter how later peo-

1. *Time*, 24 Feb. 1992, p. 35.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ple wished they had it back.

This is much what has happened all over the world in historic times. The spread of species to new lands increased hugely in the Age of European Exploration, from 1500 on. Sometimes the animals, notably cats and rats, went ashore from ships on their own and established breeding colonies. Sometimes they were imported as domestic beasts, as with the horse in the Americas. Some ran away and, finding the environment friendly, throve and multiplied. Some, like the starling, were deliberately transplanted by people to make their new abode more homelike. Sometimes people deliberately released animals, such as goats, on islands on the theory that they would breed in the wild and furnish future travelers with meat.

I do not know where the process of increase, overpopulation, destruction of plant life, and extinction by starvation has been allowed to run its course, because wherever it has neared that outcome, men have interfered. For one thing, feral beasts are never entirely free of predation, whether by human hunters or by other introduced animals.

In the Galápagos Islands, where the strange indigenous fauna is valued for its uniqueness and for its part in the development of Darwin's theory of evolution by natural selection, pressure of human and feral predation has brought one native species after another into danger of extinction. Pigs and rats eat the baby tortoises; dogs eat the land iguanas; cats eat the birds. Not having been preyed upon since their introduction to the islands, the native animals of the Galápagos have lost the fight-or-flight instincts that in continental areas enable similar forms to cope with their animal foes.

Asses and goats eat the greenery; and they all, plus introduced plants, out-compete the native species in the struggle for survival. The larger a species' native range, the more acute is this struggle and the stronger the evolutionary pressure to stay on top of it. Therefore island species tend to be highly vulnerable to competition from similar forms brought in from continental areas.

In the Galápagos, all through the 19th century, men, especially whaling crews, ate the grown tortoises, reducing some subspecies to extinction. When during the Second World War the United States set up a naval and air base on the island of Baltra, the sailors and airmen exterminated the island's population of land iguanas, for no reason I know of save that these big lizards made inviting targets.*

In recent decades, the Charles

*Although this has been an established opinion, it is now questioned. The U.S. servicemen on Baltra were under orders not to molest the wildlife. Likelier reasons were destruction of the habitat by the U.S. Air Base, predation of the young by feral cats, and destruction of the vegetation by goats. See *Noticias de Galápagos*, No. 51, July 1992; arts. pp. 11, 20.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Darwin Research Station and the Ecuadorian government have tried to exterminate some of the exotic species, such as feral dogs. This has been successful on some smaller islands; but on the larger ones an army would be needed, making the campaign very costly.

Replacement of one species by another is of course nothing new. Man is the most successful exterminator since the Cretaceous-Paleocene disappearance of the dinosaurs, pterosaurs, etc. Maoris arriving in New Zealand ate all the moas, huge emulike birds ranging up to four meters in height. The Malagasies of Madagascar ate all the elephant birds. This *Aepyornis* was another flightless ratite, not so tall as the larger moas but heavier, weighing up to half a ton and laying the largest known egg.

Some think, with convincing reasons, that the ancestors of the Native Americans, coming over from Siberia at the end of the Pleistocene Ice Age, found the Americas swarming with large, edible animals: mammoth, mastodon, ground sloth, camel, horse; and others like bison, bear, wolf, peccary, beaver, and armadillo much larger than their living relatives. The newcomers went to work on these faunas and in a few centuries or millennia had wiped out most of those species. We may guess that they then went through a long time of starvation until, about 5,000 years ago, they learned to plant maize and beans. The fauna was eventually replenished by some of the smaller relatives of the exterminated species.

The arrival in Australia of the ancestors of the present Native Australians was likewise followed by a crash of the population of large native marsupials, such as a giant kangaroo and a rhinoceros-sized wombat.

Australia had a wolflike marsupial carnivore, the thylacine. The introduction of dogs, ancestors of the existing dingo, spelled its doom because it could not successfully compete with a placental canid. The thylacine persisted on the island of Tasmania into the early years of this century. Then British settlers, determined to transform Tasmania into a British sheep ranch, exterminated it. It finally vanished around 1930, despite last-minute efforts to protect it.

Most primitives—savages and barbarians, in the precise technological senses—have no notion of conservation. To them, the gods furnish their prey. If the animals disappear, the reason, they think, is not that they have killed them off too fast but that they have failed to propitiate the gods. Thus in 1890, the Plains Indians tried to "dance back the buffalo" by the "ghost-dance religion," launched by Wovoka of the Paiutes in Nevada. Sitting Bull was killed in the resulting disturbances. But the buffalo did not reappear, those animals having been reduced to a remnant by white men with repeating rifles. The US government encouraged

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

this extermination in order to deprive the Plains Indians of a means of livelihood and to force them to settle on reservations.[2]

This brings up a curious irony. The American West is now infested by thousands of descendants of feral horses, which escaped from early Spanish explorers. They compete vigorously with native species like the prongbuck and tend to eat the ground bare. A healthy population of wolves would keep the horses' numbers in balance; but anyone who tries to sell the idea of reintroducing wolves to a rancher of cattle or sheep has his work cut out for him. The rancher also wants to eliminate the mustangs because they compete with his livestock for food.

Campaigns to kill off the wild horses incite protest from people who either love horses or believe in the rights of animals. To satisfy both horse lovers and ranchers, some mustangs are captured alive and then sold or given away. Considering the vigor with which horses reproduce and the lack of natural predators, such a program is unlikely seriously to reduce the mustang population.

Is turning these horses loose introducing an exotic species, like bringing the dingo to Australia, or is it reintroducing it to a place where it once swarmed but was later exterminated by man? Since we have no living specimens of the Pleistocene American horse to examine, we cannot tell how close it came to the modern *Equus caballus*. When the modern horse runs wild, the more extreme breeds are soon eliminated by natural selection. The resulting animal is much like the living wild horses, Przewalski's[3] horses from Mongolia, a stocky, hardy, reddish-brown beast. So the Western mustang is, in effect, replacing the original American horse with one that is, if not identical, at least closely related.

For a parallel to my Goat Island fable, take Rapa Nui or Easter Island, named for the day Admiral Roggeveen discovered it in 1722. When Polynesians, probably from the Marquesas, landed there in (probably) the 9th century A.D., they found the island covered with forests of palms and hardwoods. They had brought supplies for the usual Polynesian occupations of farming and fishing. Their main crop was the sweet potato; the breadfruit and coconut trees they had brought found the climate too cool and died out.

The Pascuans (as the Easter Islanders are called, from the Latin

2. "Bison" and "buffalo" are both Old-World names for several species of Old-World wild cattle. Both are equally correct (or incorrect) when applied to the American species.

3. Nikolai Przewalski was a 19th-century Russian explorer. The surname, pronounced "pshev-AHL-skee," is the Polish spelling of a Russian name.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

for "Easter") cut down the trees to build houses and boats and to make the sleds, pry bars, and other artifacts by which they moved the huge statues that they pecked out from volcanic tufa with stone tools. With the usual improvidence of primitive man, they cut and cut until the last tree was felled. Then they found themselves unable to build more boats, so that they could not leave the island if they wished. They could not even fish so effectively as before. Present-day efforts to reforest the island are thwarted by the Pascuans's bent to cut down the trees as saplings, and to whittle them into statuettes to sell to tourists.

The pressures of a growing population and a declining food supply resulted, in the 17th and 18th centuries, in ferocious intertribal warfare, wherein losers were eaten as a matter of course. Then the kidnapping of most of the Pascuans by Peruvian slavers in 1862, and the subsequent exiling of most of the rest to Tahiti by a French adventurer who wanted to convert the island to a sheep ranch, practically wiped out the native culture.

In 1798, the Rev. Thomas Malthus pointed out that human beings in any area tend to increase until their numbers outrun the food supply. He originally advanced a mathematical argument, that people increase by geometrical progression (compound interest) while their food supply goes up by arithmetical progression. Hence there is always an inevitable "starving margin," as the late George Galton Darwin expressed it. The mathematics is not taken very seriously nowadays; but the fact of a general, consistent tendency to increase numbers up to the maximum the food supply allows definitely is.

Malthus saw that, in the absence of other checks, population growth would eventually be brought to a halt by war, famine, pestilence, and "vice." He thought the suffering of the "starving margin" might be ameliorated by "moral restraint," by which he meant sexual abstinence. Contraception, as little as was known about it at the time, met his disapproval as a Christian clergyman.

In the nearly two centuries since Malthus wrote, students now have a clearer idea of the facts. For one thing, the general principle of increase in numbers applies through the whole animal and plant kingdoms. If any species fails to produce enough young to keep its numbers up in the long run, it becomes extinct. Different species cope in different ways. Plants, invertebrates, and most "lower" vertebrates like fish and amphibians produce vast numbers of potential offspring in the form of seeds or eggs, only a tiny fraction of which ever survive to become reproducing adults. The rest are eaten by other organisms along the way. Mammals, birds, and some reptiles, like crocodiles, have smaller families, but are programmed to care for them in ways that improve their

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

chances of survival.

Predation helps to keep the numbers in balance with all but the largest and most formidable species, such as elephants. When the number of Arctic hares increases, the number of lynxes and owls, which prey upon them, grows likewise. If the hare population crashes, so does that of their predators.

In addition, predators usually have territorial instincts, leading each to claim an individual hunting ground and to drive away poachers of their own species. One who cannot find a territory of his own eventually dies of starvation. Thus the number of predators is kept proportionate to the numbers of their prey.

As far as we can tell, human beings and their apish ancestors operated under the same identical laws. Then culture raised the limits that the natural environment had imposed on their numbers. Culture equipped them to get much more food out of a square kilometer than they could have without it. Weapons, for instance, enabled them to defeat would-be predators. In addition, speech enabled them to cooperate to kill and eat large, formidable prey, such as the woolly mammoth. This was long a highly successful species of the Eurasian steppe. The mammoth hunters of Russia and Ukraine worked out their techniques so effectively that they built huts of the bones of the slaughtered mammoths.[4]

Human hunting cultures tend to go after the largest prey they can master, because hunting them is the most efficient form of hunting in calories collected per man-hour of work. When their main prey animals were killed off, we may guess that the American tribesmen suffered hard times, with much starvation, perhaps for many centuries, until around 5,000 B.C. the discovery of farming maize and beans enabled a square kilometer to support a larger population than before. The early farming diet was probably less healthy than that of hunting and gathering, but it had the great advantage of being more reliable.

The world's first farmers began their work in the Middle East around 10,000 B.C. All the countless technological advances in food-getting of mankind since then, from irrigation to genetic engineering, come down basically to enabling a given area to support a denser human population. It is estimated[5] that, on the average, hunter-gatherers need about 10 square kilometers per person to support themselves; a family of 4 would need 40. Naturally the figure varies widely with local conditions: climate, soil, fauna, and flora. When men discover dry farming, they can manage on half a square kilometer per person. With irrigation farming, the minimum area per person shrinks

4. Gladikh, Kornietz, & Soffler: "Mammoth-Bone Dwellings on the Russian Plain," *Scientific American*, Nov. 1984, p. 164.

5. Roger Lewin: *Human Evolution* (W. H. Freeman, 1984), p. 96.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to one-tenth of a square kilometer. In other words, an area farmed with irrigation can support about 100 times as many people as that same area could on a basis of hunting, fishing, and gathering wild edible plants.

As soon as one of these improvements in food producing comes into use, however, the population in that area soars up to the largest the area can carry. Ever since the Agricultural Revolution, this carrying capacity has been inching up as a result of these improvements, from the invention of the plow down to 20th-century advances like superior breeds of crops, fertilizers, insecticides, and sophisticated forms of irrigation.

One might think that, because of mankind's inexhaustible ingenuity, this rise in the caloric value of crops could go on indefinitely. But the growth of population clamps its own limits on the process. The Earth's land area is after all a fixed quantity. One cannot farm without an area to farm on. The area cannot at the same time be used for roads, houses, shopping malls, airports, and other non-agricultural uses.

Obviously you cannot farm a lot on which people are standing jam-packed crowded, as in the New York City subway system at rush hour. Something must give long before that point. At the rate of increase of recent decades, mankind would reach this literal "standing room only" within about 1,500 years. Of course, something would have to give first.

An Egyptian agronomist with whom I discussed these matters on a Nile boat in 1960, said that he trusted God to take care of the problem. God, he said, would kill off the surplus population by natural disasters like earthquakes. (There had just been a big one in Morocco.)

Well, we have in this century seen plenty of disasters, including the most destructive wars of all time; but the world's population has continued to rise.

If God would either shrink all human beings down to half their present size, or alternatively expand the Earth to twice its present dimensions, that would cope with the problem at least temporarily. But I see no evidence that any god has any such plan in mind.

A fixed lid on the growth of human population is an idea that many find emotionally repugnant. Sometimes it stirs up such hostility that when Stanley Schmidt brought up the matter in his editorials that appeared in the December 1990 and February 1991 issues, a letter writer called Schmidt a Nazi.[6]

Others say there is nothing to worry about because we shall soon be able to expand to other planets. Realistically, the only other bodies of the Solar System on which human beings could alight at all, as things stand, are Luna, Mars, and Venus. Venus we can dismiss, with its 900°F surface temperature, its

6. *Analog*, Dec. 1991, pp. 169f.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

air pressure of 90 atmospheres, its lack of oxygen, and its sulfuric-acid rain. Under the most favorable circumstances, life on the Moon or Mars would be far more taxing than life on Antarctica. And we do not see Asia's 15-million yearly increment of population rushing off to Antarctica.

There may, of course, be other planetary systems where at least one planet does not impose such daunting conditions; but Terran technology has a long way to go before it can take us thither. Besides, for every human being that men have put into space, each has required a small army of scientists and technicians on Earth to supervise and manage the flight.

Other objections to population control take other approaches. One letter writer says that in "environmental concerns . . . family size is of no consequence." This makes as much sense as saying, when a tornado strikes a house, wind velocity is of no consequence to whether the house falls down. Another letter writer asks Schmidt: "Where is your faith in science?"[7]

St. Paul succinctly defined "faith" as "the substance of things hoped for, the evidence of things not seen."[8] In other words, it is belief without evidence—at least, without any evidence that a scientist would give weight to. That is the opposite of the scientific method, which tries to accept nothing without evidence.

As for "faith in science," I have fair confidence in science to solve many puzzles; but I do not expect it to enable me to jump out the window and fly by flapping my arms. Learning is fine, but common sense is also needed.

The emotional animus behind these objections to population control sometimes leads natalists into arguments that are plain silly. Before we moved to Texas, I read a letter in the Philadelphia *Inquirer* denying that population density posed any threat. The writer said: "Look at Hong Kong and Singapore, which flourish despite high population density!" Of course Hong Kong and Singapore do not grow more than a small fraction of their own food. Most of it they import from much larger farming areas, not built over and urbanized as those two city-states are.

Around the present world, one sees larger and larger areas coming under human population pressure. A few years of good crop-growing weather gives the inhabitants enough to eat. Population rises. Then a bad year brings famine, with corpses starved down to mere skeletons lying about. The most lethal famines have occurred lately in Ethiopia and the western Sudan, but other lands like Haiti and Bangladesh are close to the famine line. Sending such countries foreign aid or medical assistance merely aggravates the population problem by engendering more starving people.

7. *Analog*, Sep. 1991, pp. 170f.
8. Hebrews xi, 1.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The American continents have so far been fortunate, for a simple reason. Before British and Iberian settlers, having enormous technological advantages over the mostly stone-age peoples who dwelt there, stole these continents from their previous inhabitants, the population was too small and primitive seriously to deplete these continents' natural resources. This situation is changing fast as the population grows and the resources, such as Texan petroleum and Amazonian forests, shrink.

Then why do people react so emotionally against the idea of limiting population? Many do not merely disagree with it; they *hate* it. I believe I know a plausible reason.

As I explained in "The Ape-Man Within Us,"[9] the growth of the learning and reasoning facilities in the brains of vertebrates, especially those of the primates, has crowded out many of the instincts. These program the animal to go through life without thinking but with eating, avoiding being eaten, and reproducing in enough numbers to keep the species going. In the case of man, wherein the process has gone farthest, the species is left with practically no genuine instincts save a baby's sucking, clinging, and smiling.

The other instincts, however, did not completely disappear. Instead, they survive in rudimentary, attenuated form—mere ghosts of their former selves. They can persuade an individual but not compel him, as an instinct (in the narrow sense) would do. We may call such remnants of instincts "drives."

One such drive urges the individual to preserve not only his own life and health, but also those of his near kin, who bear many genes identical with his. Since natural selection tends to choose individuals bearing the genes most conducive to survival, it is biased not only towards the individuals with the most such genes but also, to a lesser degree, towards their kinsmen. Under primitive hunting-gathering conditions, this means the other members of his band, all of whom are more or less related. In such small groups, inbreeding is usually avoided by customs of seeking mates from other bands. The same attitudes persist when the band expands into a tribe, practicing rudimentary agriculture and animal husbandry.

Hunter-gatherer life is hard and precarious. To survive, a band must protect its women and children. Hence, I think, "Women and children first!" is not merely a slogan thought up by some sexist male, but the expression of a primitive drive. Bands and tribes that followed the custom had a better chance of survival than those that did not.

For this among other reasons, I suspect that women are unlikely ever to obtain complete equality with men in military service. A soldier in combat is likely to be distracted, discomforted, and con-

9. *Analog*, June 1989, pp. 87-91.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

fused by the sight of a woman risking her life alongside of him. His primitive drives tell him that he ought to be protecting her.

Therefore a band or tribe wants to keep up its numbers so that the next time it fights those bastards across the river, it can beat them. Different groups have tried to strengthen their numbers in various ways. Some, like the Plains Indians, would massacre the adults of a neighboring tribe but take the children alive to bring up as members of their own group. The Mormons did this in the Mountain Meadows Massacre of 1857. Having by treachery massacred the adults of a wagon train of "gentiles" passing through Utah, they took the children alive to Salt Lake City to rear as good Latter-Day Saints. The Hebrews sought the same end by imposing on the Children of Israel severe taboos against any sexual act, such as masturbation or *coitus interruptus*, that would not add children to the tribe.

The combination of the built-in drive to enlarge the group and the progress of science and technology have given mankind a population curve, fairly flat up to the Agricultural Revolution of 10,000 years ago, but which then began to rise sharply. Within recent centuries the curve has steepened further. In the industrialized countries, the curve has somewhat flattened out, though it is still rising. But in preindustrial countries, the introduction of modern technology and medicine has brought an explosive growth.

From an estimated world population, before the Agricultural Revolution, of under ten million, the number has now passed five billion—over 500 times as many people—and is still soaring. It looks more and more like a replay of my little fable about Goat Island, with the planet for the island and *Homo sapiens* for the goats.

Then why the widespread human reluctance to face these facts? Why the repugnance even to think seriously about them? The deeply-rooted drive to add more warriors to the group at all costs could explain it. This is not surprising.

Many drives that worked fine to keep the species going during man's several million years of hunter-gatherer life work badly in civilization and must be curbed, if not completely or to the satisfaction of all, at least to some extent. The evolutionary pressures during the hunter-gatherer period pounded the species into very effective, successful hunter-gatherers.

The last 5,000 years of civilized life, however, have been much too short a time to make them over into upright, far-sighted, selfless, altruistic statesmen and commercial leaders. In fact, I know of no reason to think that the present environmental pressures are pushing the species towards those ideals. The wonder is not that they do so badly in civilized roles but that they do as well at them as they do.

For instance, human beings, especially males, have a built-in drive

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to hunt edible wild animals. That was how for ages they obtained a substantial part of their diet. (In tropical climes the women, gathering edible plants, furnished the larger part of the diet in calories.[10] But meat was important as providing concentrated protein.) With human numbers climbing into the billions and the number of wild animals shrinking, it is not practical to let men hunt to the degree their drives urge them to. It would not do, for instance, to let them prowl city parks shooting pigeons and squirrels for their dinners. So hunting is more and more restricted to an amusement of a minority of men for limited yearly times. Those who do it are to a large extent those economically least in need of the meat to survive.

Hunting is perforce restricted, though not neatly and precisely. Some hunters poach out of season; some demand that the rules be loosened to give them more freedom to hunt; some, that the rules be tightened because they deem hunting an infringement of animals' rights or fear the extinction of a species. Some gun enthusiasts, citing the ambiguously-worded Second Amendment to the US Constitution, furiously oppose any restriction on their right to carry and use a gun.

Likewise with ethnic prejudice. The hunter-gatherer band was suspicious of strangers who trespassed on its territory and so developed a quickly-roused hostility towards anyone who obviously did not belong to the band. The most obvious differences aroused the quickest hostile reaction; boys get their practice at identifying and attacking strangers by bullying any boys who seem different from the rest.

The most obvious differences among men are the racial, followed by differences of speech and costume. The most visible differences lie among the three major races: Caucasoid, Mongoloid, and Negroid. Hence racial prejudice is based on a built-in drive and may therefore prove impossible ever completely to eliminate.

Indecisive conflicts of the same kinds as those between gun fanatics and gun controllers, and between racists and anti-racists, may be expected when and if governments make serious efforts to limit their populations. The best that can be said for such efforts is that all the visible alternatives are worse. One alternative, improbable but not impossible, is that used by the Pascuans. When other sources of food fail, people will simply eat one another, thus stretching the supply of calories for a while.

An ordinary human family does not need a written constitution, with legislation and elections, to manage its affairs. Matters are taken care of informally. Jobs are parceled out according to the interests and abilities of family members and

10. Richard B. Lee: *The !Kung San* (Cambridge Un. Pr., 1979), pp. 158-205, 450.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

according to their dominance relationships.

A hunting-gathering band operates in much the same way. The leader of the hunt is usually not an elected or otherwise chosen chief, with a permanent office and formal rights and responsibilities, but one who has been yielded the position on the basis of proven competence.

With the growth of a band into a tribe, numbers increase beyond the point where such informal procedures work. Even a nice family has occasional quarrels and disagreements. When the group grows to a tribe, the number of relationships among the members increases (as explained in "The Ape-Man Within Us")[11] almost as fast as the square of the number of individuals. More and more of these relationships are between unrelated individuals. Such pairs do not have the inborn inhibitions that in a family normally discourage (though they do not always prevent) physical assault. Therefore disagreements between such pairs are likely to escalate to violence and homicide.

The tribe, however, cannot afford to have its members crippled or killed in such internal conflicts, since such events deprive it of warriors. Therefore *government* becomes necessary; that is, a definite *structure* to impose conflict control on the group. Leadership is formally vested in one or a few persons, such as the high chief, the war leader, and the shaman or priest. One individual may combine these offices, or they may be divided among several. Officers may be chosen by popular election, or inherit their powers from their king, or be nominated by a supernatural omen, or talk and bully their way into the jobs by aggressiveness and *terribilità*. The variety of different ways whereby tribesmen handle these matters is enormous.

Hence conflict control is an important factor in the lives of all social mammals. Quarrels occur among most monkeys and apes, and these may escalate to a fight to the death. So these animals have developed etiquettes to control conflict and reconcile recent antagonists. The code varies with the species: macaque, baboon, chimpanzee, or bonobo. (This last was formerly called the "pygmy chimpanzee" but is now recognized as a separate species, even closer to man than the common chimp.)[12]

Conflict control is also a major preoccupation of the main religious sects. But the conflicts among which control is sought are within the tribe or in-group, not with those outside. (Buddhism is more universally benevolent in this matter than any of the three great monotheisms.)

In the Exodus myth, Yahweh commands the Children of Israel, through Moses: "Thou shalt not kill!" But on the way to Canaan,

11. *Analog*, June 1989, p. 84.

12. Frans de Waal: *Peacemaking Among Primates* (Harvard Un. Pr., 1989).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"they slew all the males" of the Midianites. Not yet satisfied, Yahweh through Moses demanded that they "kill every male among the little ones, and kill every woman that hath known a man by lying with him." In Canaan proper, "of the cities of these people, which the Lord thy God doth give thee for an inheritance, thou shalt save alive nothing that breatheth: But thou shalt utterly destroy them; namely, the Hittites, and the Amorites, the Canaanites, and the Perizzites, the Hivites and the Jebusites; as the Lord thy God hath commanded thee."[13]

Developments of the last ten or twelve thousand years have made the machinery of conflict control more necessary than ever. As the size of the group increases, the relations among the members become more complicated and require more elaborate and detailed regulations. In trying to bend regulations in their own favor, people complicate them further, until (as with the present American tax laws) complication approaches absurdity. This is an unfortunate but inevitable result of population growth and technological progress. Any new technological factor, such as the railroad or the television industry, calls forth a host of new regulations to keep conflict under control.

For thousands of years, conflict-control mechanisms have been designed to prevent fighting within a group, not between independent groups or their leaders. Anyone can see, from the history of the 20th century, how ineffectual conflict control has been among independent nations, who have continued to operate on the principle that Wordsworth attributed to the Scottish highlanders:

. . . the good old rule
Sufficeth them, the simple plan,
That they should take, who have the power,
And they should keep who can.[14]

Thinkers have long speculated on the possibility of a world state to bring all the squabbling tribes and nations under one rule and force them to keep the peace. Emperors, popes, and caliphs have held out the hope that, if only all mankind would sensibly put themselves under this or that world ruler, and do as he told them, universal peace would reign.

None of these emperors, popes, or caliphs, however, made their rule effective over more than a small fraction of mankind. Moreover, the record of such would-be world rulers in the exercise of such power as they did attain is not such as to confer implicit confidence in any of them.

Attempts have been made in the present century to set up a super-government for international conflict control. Of these, the League of Nations (1924-46) failed to stop Musso-

13. Exodus xxxi, 13; Numbers xxxi, 17; Deuteronomy v, 17; xx, xvif.

14. Wm. Wordsworth: *Rob Roy's Grave*, St. 9.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

lini from conquering Ethiopia (1935-36). It was fatally flawed, not only by the inherent contradiction between the idea of national sovereignty and that of forcibly stopping an aggressor, but also by the refusal of the United States, in the 1920s in the throes of postwar isolationism, to join the League.

In 1945-46 a slightly improved League was set up as the United Nations Organization, or UN. Along with improvements, the UN retains many faults of the League. It represents governments, not their peoples. It does not have the power to tax and to maintain and direct its own armed forces: a condition that, I need hardly say, would present its own dangers. It vests special powers in the Security Council. This is made up of representatives of what, at the time of its founding, happened to be leading military powers. But the state of being a "leading" anything is at best temporary. Such rankings are significant only in the short run.

Thus China was a super-power in the 15th century, Spain in the 16th, France in the 17th, and Britain in the 19th. Considering the ubiquity, power, and persistence of the ancient tribalistic drive, crying: "My country" (or province, party, or sect) "right or wrong!", perhaps the present UN is the best we can expect at this stage of human cultural evolution.

Marxists envisioned a peaceful world Communist regime. This idea, as we can now see, was based on a fatally unrealistic picture of the ordinary human being. Jean Jacques Rousseau thought that men were naturally "good," just as some theologians thought they were naturally "bad." Both expressions are meaningless. "Good" is a word that people apply to things, acts, and events that benefit them or make them feel happy; "bad" they give to those that do the reverse.

Despite the last few million years of evolution, men remain basically a species of peculiarly specialized African ape. We should not be surprised to find so many of them snatching each other's bananas whenever they think they can get away with it.

The practical difficulties and complications of large-scale government, like the number of relationships among members of a group, rises faster than the numbers involved. It may reach a point where the whole thing breaks down, as in the collapse of the USSR.

Making governments bigger, more complex, and more oppressive, in the sense of interfering more and more in people's everyday lives, has disadvantages. No matter how severely people are conditioned, indoctrinated, and disciplined, a point is reached beyond which they become resentful and rebellious. When enough do this, the regime, no matter how utopian its objectives, totters.

Ronald Reagan, hugely popular despite policies on which the current US depression can plausibly be blamed, was elected on a program of shrinking the government back to the size and power it had in earlier times. But the government went on growing and becoming more complex, be-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

cause as long as inventors and other innovators continue to complicate life, and as long as the population continues to grow, the government is under pressure to grow likewise, to cope with conflict control. It is pushed in this direction even though the conflict is likelier to take the form of leveraged buy-outs than fists or bullets.

Taking off the controls results merely in the kinds of scandal that have lately afflicted the banking industry among others. People see a chance to snatch others' bananas with impunity, and leap at the opportunity.

We often hear that some such international regime *must* come because the destructive effect of modern weapons has expanded so. Perhaps it will come to pass despite practical difficulties, like those that brought down the mighty USSR. But every notable advance in weaponry has caused statements that the new weapons had made war too terrible for people to engage in it.

In the 4th century B.C., when the catapult had recently been invented in Sicily, one of its missiles, a six-foot arrow, was taken as a curio to Sparta. King Archidamos took one look and cried: "O Herakles! The valor of man is extinguished!"[15]

When Cervantes published the first part of *Don Quixote* in 1605, his Knight of the Mournful Countenance complains: "Blessed were those ages without the dreadful fury of those diabolical engines of artillery, whose inventor, I truly believe, is now receiving in hell the reward for his devilish invention, by means of which a base and cowardly hand may deprive the most valiant knight of life."[16]

On the other side of the coin, Bertrand Russell once made the disquieting suggestion that, since fear and hatred of foreigners were the main forces for social cohesion, a supra-national regime that got rid of them might cause the society to fall apart into cutthroat anarchy.

As another historical irony, it was long thought that, while the Chinese discovered gunpowder, the gun was invented in Germany in the 14th century. New evidence indicates that the Chinese were making cannon decades earlier than the earliest German records of such devices.[17]

This discovery throws light on another irony. China, which in the 14th century led the world in technology, then stagnated until the Empire was helpless to resist British aggression in the Opium Wars of mid-19th century. The most plausible explanation that I have seen is that during most of the intervening centuries, China (save for

15. Plutarch: *Sayings of Kings and Commanders: Archidamos son of Agesilaos.*

16. Miguel de Cervantes: *El Ingenioso Hidalgo Don Quixote de la Mancha*, Part I, Chap. 22 in the Walter Starkie translation and abridgment; Chap. 32 in the original Spanish. Cf. also Hotspur's speech in Shakespeare: *King Henry IV*, Part I, Act I, Sc. 3.

17. L. Carrington Goodrich: "Early Cannon in China," *Isis*, June 1964, p. 193.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

several barbarian invasions and revolutions) was under a unified imperial government, which kept the land at peace. Meanwhile Europe was convulsed by ferocious and almost continuous wars among its states and sects, such as the Thirty Years' War, which killed off over half the population of Germany. So Europeans were under constant pressure to develop newer and deadlier weapons. Peaceful China was not.

In the current universal ideology, progress is *good*. Far be it for me to decry progress. Without modern medicine, I should probably not be writing this article; without the transoceanic airplane I could not have afforded the time to visit some distant Old World places.

Like most things, progress also has its price. A disadvantage is the increasing complication that progress brings at every step.

As an example, the rules controlling sex seem simple among hunter-gatherers. Couples mate when the urge comes upon them in adolescence. If they find they cannot get along, they switch. While each member of a pair has a drive to demand sexual exclusiveness from its mate, it is not uncommon in such bands for the man of a couple to lend his wife for the night to a visiting friend or kinsman.

The Agricultural Revolution brought a huge change in daily life. The drudgery of the farm replaced the thrill of the hunt. Private property became an important preoccupation. Since a family could not in its travels take its fields and pastures with it, it had to adopt a sedentary life in place of its former nomadism. Fixed in place, it could accumulate far more possessions than it could when it had to carry its entire estate on its backs or heads.

Then, what happens to property when its owner dies? If you do not want every funeral to end in a brawl among the deceased's friends and kin over who gets what of the old man's possessions, including his land, you must have rules of inheritance. If the rule says that the eldest son gets a certain part of the estate, there must be agreement as to which children are in fact the offspring of the deceased. There can be no more hospitable wife lending or frolicsome wife swapping, because such actions would cast doubt on the genealogical record. Tabus on fornication and adultery are also forms of conflict control.

Hence among peoples from the early farming-herding level up to civilization, we find ever-growing complication in the rules for mating and sex. Without such rules, fights over mates may become so common as to threaten the people's survival, as among the Yanomamö. Among the Zulus, adultery by either of a married pair was punished by death. Christianity and some forms of Hinduism long tried to make marriage indissoluble, no matter how hard a time either spouse of the pair gave the other.

We have a planet increasingly crowded by our own species. We hear of this or that environmental

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

threat: ozone-layer depletion, greenhouse warming, atmospheric pollution, oceanic pollution, deforestation, species extermination, and so on. Emergency remedies are constantly being proposed. But, because of the basic human drive to increase the band or tribe, few care to point out that these ills can all be attributed in large part to the simple fact of too many people. So far from recognizing this fact, the immigration reform act of a few years ago let in more. Anyone who objects is likely to be denounced as a racist.

So we have another case of irresistible force and immovable body. This cliché, of course, contradicts itself *a priori*, since if an irresistible force exists, an immovable body by definition cannot. We have the ever-growing population, fated to aggravate all the many ills that overpopulation, up to and including mass starvations like those of recent years in Africa, brings. But we also have a deeply-rooted emotional reaction against serious attempts to halt the increase, let alone reverse it.

What will happen? My record as a prophet is nothing spectacular, so I shall beg off answering. True, men have learned *en masse* to do many things for which no instincts or drives prepared them, such as farming, reading, writing, or wearing clothes.

On the other hand, even mankind's extraordinary adaptability has not enabled it to overcome some of the destructive tendencies to which its basically stone-age makeup inclines it. I will not say that, because the long-term choice is between population control and world-wide disaster, that stark fact will or will not necessarily lead enough of the world's billions to take preventive action. I can only guess that the future looks interesting, precarious, and *crowded.* ■

Teaching ought to have more *circus* in it.

John W. Campbell

Too often when men stumble over the truth, they tend to pick themselves up and hurry off as if nothing happened.

Winston Churchill

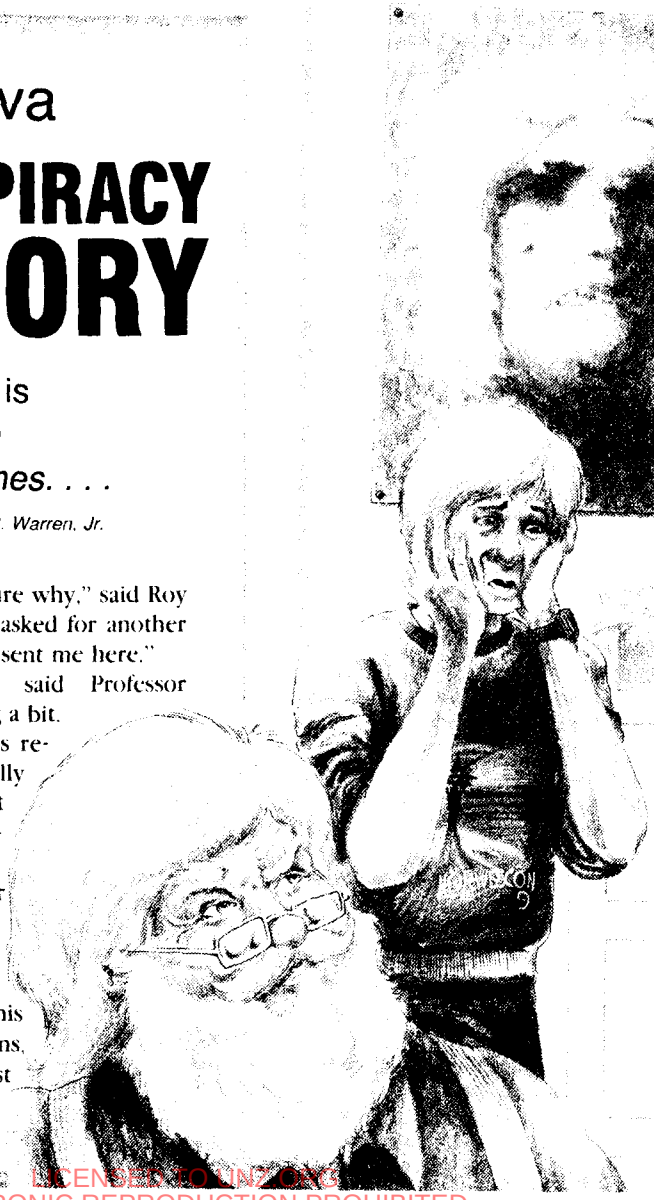
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Ben Bova

CONSPIRACY THEORY

Maybe there is *something to those headlines. . . .*

Illustration by William R. Warren, Jr.



"I'm not exactly sure why," said Roy Huggins. "When I asked for another eye checkup, they sent me here."

"To see me," said Professor Schmidt, chuckling a bit.

"Yessir," Huggins replied. He was totally serious; he did not even notice the professor's little pun.

A silence fell over them. The athletically-slim Huggins, sandy-haired and boyish looking in his sweat shirt and jeans, seemed quite honestly puzzled.

LICENSED TO LINZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Herb Schmidt, chairman of the astronomy department, was a chunky, white-bearded Santa even down to the twinkle in his baby-blue eyes. A Santa in a dark three-piece suit, sitting behind a desk covered with thick reports and scattered memos heaped high like snow drifts.

The professor eased back in his creaking old swivel chair and studied his student thoughtfully. How many times had they met in this stuffy little office? Ever since Huggins had taken his first class in astronomy, back when he'd been an undergraduate. Now the boy had turned into a man: a youthful, vigorous man with a fine intelligent mind that had been sharply honed.

Was he enough of a man to accept the truth? And to keep the secret? The next few minutes would decide.

"Why were you having your eyes checked?" the professor asked innocently.

Huggins had to clear his throat before he could answer. "I seem to be . . . well, seeing things that aren't there."

"Ghosts?" asked the professor, smiling to show he did not mean it. "Elvis Presley, perhaps?"

The younger man shook his head. "At the telescope," he said in a low, unhappy voice.

"Let me see now." Schmidt made a pretense of searching through the papers scattered across his desk. "Your time at the facility is on . . ." He let the sentence hang.

"Mars," Huggins whispered. "I've been observing Mars."

Schmidt had known that all along. He stopped leafing through the papers and leaned back in his chair again, lacing his fingers together over his ample belly.

"Mars, eh?"

"I see—" Huggins swallowed again. "—canals."

"Canals?" the professor echoed.

"Well—markings. I—I checked with some of the maps that Lowell drew—just as a lark, you know."

"Percival Lowell? Way back then?"

Huggins's answer came out as a tortured moan. "They match. My drawings match Lowell's almost perfectly. A whole network of canals, all across the face of Mars."

"But the photos you've taken don't show any canals. I've seen your photographic work."

"There aren't any canals on Mars!" Huggins blurted. "You know that! I know that! We've sent spacecraft probes to Mars and they *proved* there are no canals there! Lowell was crazy!"

"He was . . . enthusiastic. That's a kinder word."

Huggins nodded unhappily and chewed on a fingernail.

Schmidt heaved a big sigh. "I can see why you're upset. But it's not so bad. So you've got a problem with your eyesight. That doesn't matter so much nowadays, what with all the electronics—"

"There's nothing wrong with my eyes! I can see perfectly well. I had an eye test back home during the Thanksgiving break and I checked out twenty-twenty."

"Yet you see nonexistent canals."

Huggins's brief flare of anger with-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ered. "It's not my eyes. I think maybe it's my mind. Maybe I'm having hallucinations."

The professor realized the game had gone far enough. No sense tormenting the poor fellow any further.

"There's nothing wrong with your mind, my boy. Just as there is nothing wrong with your eyes."

"But I see canals! On Mars!"

Stroking his snow-white beard, Schmidt replied, "I think it was Sherlock Holmes who pointed out that when you have eliminated all the possible answers, then the impossible answer is the correct one. Or was it Arthur Clarke?"

Huggins blinked at him. "What do you mean?"

"Did you ever stop to think that perhaps there really *are* canals on Mars?"

"Wha—what are you saying?"

"I am saying that Mars is criss-crossed by an elaborate system of canals built by the Solar System's finest engineers to bring precious water to the Martian cities and farmlands."

Half-rising from his chair, Huggins pointed an accusing finger at his professor. "You're humoring me. You think I'm crazy and you're humoring me."

"Not at all, my boy. Sit down and relax. I am about to entrust you with a great and wonderful secret."

Huggins plopped back into the chair, his eyes wide, his mouth half open, the expression on his face somewhere between despair and expectation.

"You understand that what I am about to tell you must be kept totally secret from everyone you know. Not even that young woman you intend to marry may know it."

The young man nodded dumbly.

Schmidt leaned his heavy forearms on his littered desk top. "In 1946," he began, "an experimental spacecraft crash-landed in the Sonoran Desert of New Mexico. Contrary to the rumors that have arisen every now and again, the crew was not killed, and their bodies have not been kept frozen in a secret facility at some air force base."

"No . . . it can't be . . ."

Smiling broadly, the professor said, "But it is true. We have been in contact with our Martian brethren for more than half a century now—"

"We?"

"A very small, very elite group. A few university dons such as myself. The tiniest handful of military officers. Four industrial leaders, at present. The group changes slightly as people die, of course. Three of our members are living on Mars at the present moment."

"*You're* crazy!"

"Am I?" Schmidt opened his top desk drawer and drew out a slim folder. From it he pulled a single photograph and handed it wordlessly to the goggle-eyed Huggins.

Who saw three figures standing in a dripping dank jungle. Only the one in the bush hat and moustache was human. They were standing in front of the enormous dead carcass of something that looked very much like a dinosaur. Each of them was holding a rifle of some unearthly design.

"Do you recognize that man?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Huggins shook his head as he stared hard at the photograph. The man looked vaguely familiar.

"Howard Hughes, of course. Taken in 1957. On Venus."

"Venus?" Huggins's voice was a mouse's squeak.

"Venus," repeated the professor. "Underneath those clouds it's a world of Mesozoic jungles, almost from pole to pole."

"But Venus is a barren desert! Runaway greenhouse! Surface temperatures hot enough to melt lead!"

"All a bit of a subterfuge, I'm afraid," said Schmidt. "Just as our erasure of the Martian canal network. A necessary deception."

"What . . . why?"

Schmidt's expression grew serious. "When the first Martians landed, back in '46, it quickly became clear to those of us privileged to meet them that Mars was ahead of the Earth technologically—but not very far ahead. A century, perhaps. Perhaps only a few decades."

"How can that be?"

Ignoring his question, the professor went on, "They needed our help. Their own natural resources were dwindling at an alarming rate, despite their heroic efforts of engineering. And conservation, too, I might add."

"They came to take over the Earth?"

"Nonsense! Pulp magazine twaddle! Their ethical beliefs would not allow them to step on a beetle. They came to beg for our help."

Huggins felt a tiny stab of guilt at his fear-filled gut reaction.

"It was obvious," Schmidt went on, "that the Martians were in desperate straits. It was even more obvious to the tiny group who had been brought together to meet our visitors that the people of Earth were not prepared to face the fact that their planetary neighbor was the home of a high and noble civilization."

"The emotional shock would be too much for our people?" Huggins asked.

"No," said the professor, in a sad and heavy voice. "Just the opposite. The shock would be too much for the Martians. We humans are driven by fear and greed and lust, my boy. We would have ground the Martians into the dust, just as we did with the native Americans and the Polynesians."

Huggins looked confused. "But you said the Martians were *ahead* of us."

"Technologically, yes. But by no more than a century. And ethically they are light-years ahead of us. Most of us, that is. It is the ethical part that would have been their downfall."

"I don't understand."

"Can you imagine a delicate, ethically-bound Martian standing in the way of a real-estate developer? Or a packager of tourist trips? The average human politician? Or evangelist? To say nothing of most of the military. They would have been off to nuke Mars in a flash!"

"Oh."

"The fragile Martian civilization would have been pulverized. No, we had to keep their existence a secret. It was the only decent thing to do. We had to cover up the truth, even to the point of faking data from space probes and astronomical observa-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

tories."

"All this time . . ."

"We've had some close calls. The *National Inquirer* and those other scandal sheets keep snooping around. Every time a Martian tried to make contact with an 'ordinary' human being, as their ethical code insisted they should, the affair was totally misunderstood. Sensationalized by the tabloids and all that."

"What ordinary human beings?" Huggins asked.

"You see, the Martians are not elitists. Far from it! From time to time they have tried to establish contact with farmers and sheriff's deputies and people driving down country roads at night. You know the results. Scare headlines and ridiculous stories about abductions."

"This is getting weird."

But Schmidt was not listening. "We even had one writer stumble onto the truth, back in the late '40s. Someone named Burberry or Bradbury or something like that. We had to wipe his memory."

"My god!"

"It wasn't entirely effective. We've learned how to do it better since then."

"Is that what you're going to do to me? Wipe out my memory?"

Leaning back in his chair again, Schmidt resumed his beneficent Santa expression. "I don't think we'll have to. We recruit only a very, very few young men and women. I have believed for some time that you have what it takes to be one of us."

"What does that mean, being one of you?"

Positively beaming at his student, Schmidt answered, "It means helping the Martians to use the abundant resources of Venus to maintain their own civilization. It means helping the people of Earth to gradually grow in their ethical maturity until they can meet the Martians without destroying them."

"That may take generations," said Huggins.

"Centuries, more likely. It is one of the motivations behind our starting the environmental movement. If we can only get the great masses of people to treat our own planet properly we'll be halfway to the goal of treating other worlds properly. And other people."

"And in the meantime?"

Schmidt heaved a great sigh. "In the meantime we maintain the pretense that Mars is a barren desert, Venus is a greenhouse oven, and there's nothing out there in space to be terribly interested in—unless you're an egghead of a scientist."

Huggins began to understand. "That's why the space program was stopped after the landings on the Moon."

"Yes," the professor said. "A sad necessity. We've had to work very hard to keep the uninformed parts of the government—which is most of them—from moving our space program into high gear."

"Can—" Huggins hesitated, then seemed to straighten his spine and ask, "May I meet the Martians?"

"Of course! Of course you can, my boy. Their representative is waiting to meet you now."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Schmidt pulled himself up from his chair and came around the desk. "Right this way." He gestured toward the side door of the office.

His heart hammering beneath his ribs, Huggins got up and followed his professor's burly form.

Schmidt grasped the door knob, then stopped and turned slightly back toward his student. "I must warn you of two things," the professor said. "First, our Martian visitor obviously cannot run around the campus in his native form. So he has disguised himself as a human. Even so, he has to be very circumspect about allowing himself to be seen."

A tingle of doubt shivered in the back of Huggins's mind. "He'll look human?"

"Completely. Of course, if you wish, he will remove his human disguise. We want you to be absolutely certain of what I've told you, after all."

"I see."

With a satisfied nod, Schmidt turned the knob and pushed the door open.

Huggins was asking, "What else did you want to warn me—"

Before he could finish the sentence he saw the disguised Martian sitting in the darkened little side room. Huggins's jaw fell.

"That's the other thing I meant to warn you about," said Professor Schmidt. "The Martians also have a rather odd sense of humor."

Huggins just stared. At Elvis Presley. ■

(With apologies to Ray Bradbury.)

Ninety-nine percent of failures come from people who have the habit of making excuses.

George Washington Carver

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

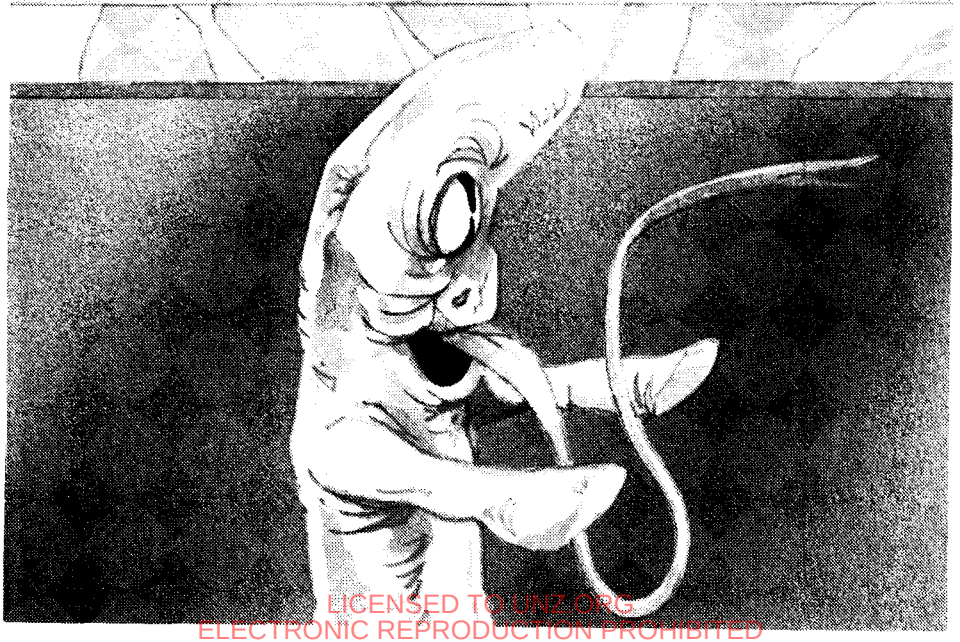
Grey Rollins

SPOILED ROTTEN

Wherein Victor turns his special talents on a peculiar kidnapping....

Illustration by Arthur George

4001-4031



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

I was nearly to the top of the stairs when the phone started ringing. If I could hear it, surely Martin could, but it just kept ringing.

Stair steps are not a problem for most humans. For me, however, they present somewhat of a challenge as my legs are only six inches long. There's nothing wrong with my legs, mind you, they're attractive, well proportioned, and eminently functional. They simply happen to be one-sixth as long as Martin's legs.

I grunted myself over the top step and began to hurry forward. It was a futile gesture, since I still had to cover a good thirty feet to get *to* the phone. The answering machine was set to pick up after the fourth ring, and I had already counted three.

The answering machine clicked when I was still ten feet from the door. Martin's voice came on, informing the caller that he wasn't available at the moment, but would be glad to discuss their case with them if they would leave their name and number at the tone.

My prehensile tongue is far more useful for manipulating things than my weak vestigial arms, so I wrapped a couple of turns around the doorknob and twisted, leaning into the wood beneath the frosted glass with the arched black lettering that spelled out Martin Crofts, Private Investigator. One of these days, I'm going to get him to put my name up there, too.

"Martin?" I called as soon as I nudged the door shut behind me. I got no answer.

Without bothering to replay the message, I removed the tape from the answering machine and dropped it into a cassette player, which I took into the inner sanctum.

Sure enough, Martin was draped over his office chair as though every bone in his body had melted. A portrait of my best human friend by Salvador Dali might appear thus.

The cassette player I placed on the window ledge, less than a foot behind his ear, ran the volume slider all the way up, and punched the play button.

"*HELLO, THIS IS . . .*"

Martin attempted to practice levitation.

He failed.

As soon as his weight left the seat, the return springs snapped the chair into an upright position. Martin, coming down, met the chair coming up. Neither won. Planes crash with less commotion than Martin made falling out of his chair.

He glared up at me from the floor. "Victor, say your prayers. You just shortened your life expectancy by a few centuries."

"If you had answered the phone, there wouldn't have been a message on the answering machine."

"Phone?" asked Martin, genuinely confused. "I must have fallen asleep."

This was such a masterful piece of understatement that I was at a loss for a properly scathing reply. "They left a message," was the best I could do.

Martin was still a step or two be-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

hind. "Why didn't you answer it, Victor?"

I mustered what patience I could and replied, as though to a child, "Because you asked me to take out the trash, remember?"

Unfortunately, my ways are known. An evil gleam appeared in Martin's eye. "You wouldn't have stopped for a snack, would you?"

"Me?" I feigned innocence.

He painfully disentangled himself from the wreckage of his chair. "I wish you ate normal food. Then we wouldn't have this problem."

Martin has trouble accepting the fact that food he would toss into the trash can in disgust is something that is just barely ripe by my standards. There's no delicacy on my home world that can match the taste of a two week-old fast food burger that's been soaked with rain.

"I *do* eat normal food. You're the one with disgusting habits. Imagine all the nuances of flavor that are revealed as the food decomposes. Think of what you're missing."

"I'd rather not, if you don't mind," he growled. "I prefer mine fresh. You ought to try it that way sometime."

"*Bleech!*" I spat, coiling my tongue into a corkscrew shape. "Fresh food is bad for you—I can prove it."

"What?" he squawked in disbelief.

"Your uncle ate fresh food. I ate properly-aged food. I outlived him. The conclusion is self-evident."

"He probably died of a heart attack while watching you eat road kill," Martin muttered.

"Don't talk like that . . . you're making me hungry."

Martin turned pale. "Me and my big mouth. We'll go by the sandwich shop over on Third tonight, but I'm going inside and having real food, not leftovers."

"I wouldn't count on it. You don't have enough money to buy an ice cube, let alone the drink to float it in."

He scowled at me and punched the playback button.

"*HELLO, THIS IS CAL . . .*"

Martin jumped for the volume slider, running it down to a more tolerable setting.

". . . Rosen." He gave a number where we could reach him, then hung up.

"Short, sweet, and to the point," I observed.

Martin's brows furrowed, looking like two black, fuzzy worms bowing to each other. "You'd think he'd at least have said what it was about."

"I can suggest a way to find out," I said. I handed the phone to him and dialed the number that Rosen had given. "Talk to the man."

"Did you have to dial with your *tongue?*" Martin hissed. He whipped out his handkerchief and began wiping the phone.

"It'll dry," I assured him.

He started to say something about crusty buttons, but Rosen answered and he left the thought unfinished. They spoke only briefly. Martin hung up and looked at me. "Put the tape back in the answering

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

machine. We're going to see him."

Cal Rosen lived downtown in a swank high-rise. Everything about the building breathed affluence. The only thing it didn't have was sufficient parking space for visitors. Martin finally found a spot four blocks away.

After unraveling me from the seat belt, he gently deposited me on the ground, then began to stride purposefully down the sidewalk, as though to distance himself from the rusting hulk in which we had arrived. You'd think he'd buy a new car, but he was more comfortable hating the one he already had.

I looked from Martin's retreating back to the still open car door, then again at Martin's back. Grumbling maledictions under my breath, I leaned against the door and pushed. It wouldn't budge. I heaved against it again. The hinges protested loudly, then, with a tortured squeal, they reluctantly gave way and the door slammed shut.

And I fell flat on my face on the sidewalk.

An obese woman was approaching with a Chihuahua on a leash. Being prone, my one eye was about on a level with the two bulging eyes of the dog. It stared—I glared back.

Chihuahuas are genetically limited to one response to all stimuli; it began to dance in nervous circles and bark. The high-pitched yipping was annoying enough, but having the creature engage in a war dance was adding insult to injury.

With great difficulty, I pushed myself to my feet. The wretched creature went into a frenzy; its toenails clicked and skritched on the concrete. My wish that it would have a sudden seizure and die went unfulfilled.

The woman was determined to give me as wide a berth as the available width of sidewalk allowed. The Chihuahua, however, had other ideas. It lunged, jerking the end of the leash from the woman's hand.

Once, while trying to recover a stolen painting for Owen Kent, Martin and I dealt with a particularly vicious guard dog—a Rottweiler. Its bark would easily have intimidated the hound of the Baskervilles. I took a deep breath and let loose a replica of that dog's bark. Having a tympanum as a speech organ does have the occasional advantage.

The Chihuahua shrieked in terror and collapsed on the sidewalk, completely unnerved. A yellow puddle began to gather under its hindquarters as it cowered.

"Oh, Maximilian!" the woman cried, wringing her doughy hands. Then she turned on me angrily. "How *could* you?"

"Just enforcing the leash law, ma'am," I replied, and started off after Martin, leaving her to decide how best to put the pygmy pest out of its misery.

"Take the scenic route?" Martin inquired facetiously when I finally came huffing up behind him.

"You overgrown hairless baboon," I snapped, "you didn't close

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the car door. It took three men and a scantily clad young lady to help me push it closed." I kicked his ankle, which is about as high as I can easily kick. "Pick me up, you beast. I wore my legs out catching up with you."

He cocked his head as though to assess the veracity of my statement. "Yup. Only six inches left. If I made you walk all the way to Rosen's building, you'd arrive on nubs the size of my thumb. It would serve you right . . . I saw you bullying that Chihuahua."

"Bullying! It attacked me! I never laid a hand on it."

"You probably caused the poor thing permanent psychological damage. I ought to make you go back and apologize."

"Quit picking on me, you ugly, two-eyed monster."

"I never laid a hand on you."

He had come full circle and snared me in a completely logical trap. Martin is not usually so devious as that. I was angry at letting myself be outwitted so I stomped on, determined to make it on my own, even if my legs *were* the size of his thumbs when I arrived. I had not gone more than ten paces when he swooped me up under his arm like an elongated football.

I started to protest, simply as a matter of honor, but thought better of it. If nothing else, being carried put me safely out of reach of psychotic Chihuahuas.

With his longer strides, we were soon at Rosen's building. I caught one swaying glimpse of the doorman as we passed. He seemed amused as he touched the tips of his fingers to the brim of his cap. "Good mo'nin', Cap'n."

The D-shaped metal handle on the thick glass door caught my right leg as we went through, giving me a sharp crack on the knee. Martin, not being aware of this, placed me on the floor in front of the security desk when he stopped to give his name to the guard on duty. I immediately began to topple as my leg collapsed. The only way to save myself from falling was to catch Martin's leg for support.

Unlike humans, who prefer to use vowel sounds, my species tends to use a buzzing noise. Thus, when I gave voice to a muted, "*Uhzzzz* . . ." the guard looked down, saw my tongue around Martin's leg, and blanched.

"Is that a *snake?*" he asked, horrified.

Martin belatedly noticed that I was listing to starboard. He reached down and grabbed the top of my tapered head. "What's wrong, Victor?"

Over the sound of my suffering, I superimposed my voice. "I think my leg is broken."

Martin picked me up, cradling me like an infant. Under the guard's cross-eyed stare, he proceeded to examine my leg, which was already beginning to swell. He prodded and poked, flexed and turned, while I hummed and buzzed under my breath. He does not have what one would call a delicate touch, but he is thorough to a fault.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"It's just bruised."

"Feels like broken glass," I assured him.

He went back to his examination. After eliciting several more varieties of verbal agony from me, he said, "Don't think so, little buddy." He then frowned at me. "How did you manage to hurt your leg?"

Martin is not malicious, just careless, so I did not berate him for not opening the door farther. "The door got me," I said simply. To the guard, still staring, I said, "We have an appointment with Cal Rosen."

The clerk looked from me to something on the desk, then back up at Martin, as though he had spoken instead of me. "Yes, I see it here. He called down and left word a little while ago. You're to go right up."

Once inside the elevator, Martin asked, "Can you stand?"

"I'd rather not. It hurts quite badly."

The doors hissed open on the fortieth floor, revealing a hall with thick carpet and unnecessarily busy wallpaper. "*Ugh*," I said. "I'm sure it's just that I'm seeing it sideways, but it appears that the interior decorator should be drawn and quartered."

"It's no better seeing it upright," Martin assured me. "Listen, you're starting to get heavy. Are you sure you can't walk?"

"My knee is the size of an apple—twice its normal size. Can't you see the little lightning bolts coming out of it, like they do in the comics?"

"Well, yeah, it is a little swollen," he admitted. He shifted me from one arm to the other. "Are you sure you haven't gained weight?"

"Martin, I'm on the verge of starvation. I've only eaten twice in the last nine days."

"I know, but that's normal for you."

"True, but I could get you convicted of cruelty to animals if I acted pitiful enough."

"Ah, *ha!*" Martin crowed. "So you're finally admitting you're an animal? The way you barked at that Chihuahua, I'm sure we could get you registered with the AKC."

Uh oh. "I think I want my lawyer present before this conversation goes any further," I grumbled.

A middle-aged couple approached. The woman caught sight of me and said, "Oh, look, Hubert! A banana with legs. How *cute!*"

"Ain't got but one eye, Martha. What good is a critter with only one eye?"

"You mean it's *alive?*" she asked, turning to him in wonder. They continued to debate the pros and cons of a monocular pet as they waited for the elevator.

"The sooner we get out of here, the better," I groused.

"Patience," Martin counseled. "We still have a fee to earn."

The security guard must have told Rosen that we were coming, for his door popped open as soon as we got to it. "Martin Crofts?" he asked.

"Yes." He deftly swung me around so that I could face Rosen

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

from a more-or-less standing position, while still cradled in his arm. "And this is Victor. He's my partner."

"I didn't know that you had a . . . partner."

Martin nodded into the apartment. "Shouldn't we discuss your problem inside?"

Rosen took the hint. He stood aside and said, "Come in, please."

Martin nodded. "Now," he said after the door was closed, "what can we do for you?"

Rosen licked his lips nervously. He looked at Martin. He looked at me. He looked back at Martin. He licked his lips again. "Um, where do I start?"

Martin said, "Just start at the beginning and we'll ask questions as we go along."

He nodded nervously. "Yes, I suppose so." He turned and walked to a chair near the window as though to sit, then thought better of it and stood facing out with his hands clasped behind his back. "Candice, that's my ex-wife, brought over Alice on Friday afternoon. Alice was to stay the weekend—"

"Excuse me, but who is Alice?" Martin asked, moving closer.

"Alice is our daughter. She turned four last March."

Martin nodded. "And your ex-wife brought Alice over on Friday," he said, to put Rosen back into the thread of his narrative.

"I see Alice two weekends out of the month. That's the way the lawyers set it up."

"I see," Martin said.

"After Candice dropped Alice off, I took her to the park."

"Which park? Saunders or Treewood?"

"Treewood. Alice loves that big slide they have. The one that comes down out of the oak tree."

Martin nodded. "I know the one. Go on."

Rosen sighed heavily, then turned from the window to face us. "I usually sit on the bench next to the water fountain. It's near the slide, of course, but sometimes I can't see my little girl when she's behind a tree or something. She moves around so much that she'll usually pop into sight within a minute or two. After a bit I got worried. I walked around and still didn't see her. She had been kidnapped."

Martin frowned. "Usually, it turns out that the child is with the other parent. Especially in cases such as yours."

"I got a ransom note on Saturday." He sounded as though it were something to be proud of.

"Can we see it?" I asked.

Rosen glanced at the floor. "The police have it."

"What's it say?"

"Five hundred thousand dollars. Small bills. They would be in touch to set up a meeting. The usual."

Martin's eyes traveled over the room, noting the quality of the furniture and the expensive curios sitting on tables. His gaze went back to Rosen. "Can you afford it?"

He nodded, paused, then nodded again jerkily. "Barely. I'll have to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

liquidate everything."

"So someone knew your worth," Martin observed.

Rosen's eyes fastened on Martin. "How so?"

"From what you're saying, they had a pretty good idea of how much money you could raise, if push came to shove."

"I . . . I hadn't thought of that. Couldn't they have just guessed? Or picked a number out of thin air?"

Martin shrugged, which shifted my position slightly and caused my knee to send out fresh waves of pain. I let out a muted buzz. "Sure. Half a million dollars is a nice, tidy sum of money," he agreed.

Rosen nodded. "All I have."

"So Alice was taken Friday. You received the ransom note Saturday. Has there been any other communication?"

"No."

"Typically the best time to do anything is when the kidnapper makes pickup on the ransom. The only other thing we can hope for is that the ransom note itself will provide the police with some clue as to your daughter's whereabouts."

Martin questioned Rosen closely for another ten or fifteen minutes, filling in small gaps in the chronology, but without learning anything important. He also got the ex-wife's address.

The doorman saluted as we passed on the way out. "You take care of that li'l fella, Cap'n," he said. "Looks like that door got 'im good on the way in."

Martin still didn't get it. His conscience is armor plated. Nothing less than a direct hit makes an impression on him.

We debated seeing the ex-wife next, but decided to go by the police station first. Pete Sims is an old friend of Martin's and will usually let us know the inside story on anything going on.

We made an obligatory stop on the way in. Marie, the closest thing Martin has to a steady girlfriend, works up front. He collected a kiss on the cheek before Marie bent to speak to me. "Has Martin been mistreating you again, Victor?"

"Oh, yes! Terribly," I told her. "He only feeds me twice a week."

She smiled. "I think I've got a head of lettuce that's going bad. Want me to save it for you?"

"What color is it?" I asked.

"Still green . . . mostly."

"Wait until it's black and purple and slimy all over. That's when they taste best."

Marie is a brave woman—she only nodded. "Another few days should do it."

"I'm drooling."

"Don't you dare," Martin protested. "This is the last clean shirt I've got. If you slobber on it, I'll—"

"You'll do no such thing," Marie said, reaching out and stroking my side gently. "Victor's a sweet little guy."

"Unless you're a Chihuahua," Martin said. "Marie, I hate to run, but I need to speak to Pete for a few minutes."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

She pouted, knowing full well that the sultry look she was turning on Martin would melt him in his shoes. "And I thought you were here to see me. . . ."

Martin beat a hasty retreat. "God, that woman does wicked things to my hormones," he muttered as he carried me down the hall towards Pete's office.

"She never laid a hand on you," I noted.

The corner of his mouth twitched as though he were trying to keep from smiling. "Touché."

Pete was sitting behind his desk, reading a report. Half-eaten, a fast-food burger lay on its wrapper within easy reach. Two empty wrappers lay next to it. His feet were propped atop all the layers of paperwork that lay in untidy piles across his desk. His head bobbed up when he heard us come in, then he frowned. "What the devil is wrong with your leg, Victor?"

"It hurts."

He ran his fingers through the ruins of what had once been a full head of red hair and slid out of his chair. "Well, hell, I reckon so." Gently, he touched my knee, then nodded slowly. "Let me try something."

Squatting down, he began rubbing his hands together briskly. "This will hurt a bit."

I steeled myself. "I'm ready."

His palms were palpably warm from being rubbed together. He placed one on each side of my joint and began to press, quite hard. Slowly, he rubbed each hand in a circle, using the other to steady my leg. He alternated hands in this manner several times. The first cycle actually felt good. Then the pain started to build. When I started buzzing, he glanced up and met my eye, but continued to rub. "Steady, Victor."

Amazingly, the sharp-edged pain abated quickly. In its wake, it left only a dull ache. Comparatively, though, it was an improvement. "Pete, have you ever considered becoming a doctor?"

He grinned at me. "Why would I want to go and do a thing like that? I'm just now getting good at being a cop." He grunted as he pushed himself to his feet. He carries a perpetual paunch, much the way that Martin had been carrying me—as baggage he would rather do without, but has come to love. At least, I assume Pete loves his belly, he feeds it enough.

He maneuvered back around his desk and flopped into his chair. "So . . . what can I do for you? It's too much to hope that this is a purely social call."

"The Rosen kidnapping this past Friday," Martin told him.

Pete snorted. "Should have known you'd make it hard on me. Why don't you fellows ask me about a homicide instead? That way I'd have it right here on my desk, instead of having to tromp all over the building." His face twisted into a grimace. "OK, sit tight. I'll be back in a minute."

"Martin?" I asked, after Pete had maneuvered his bulk through the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

door. "Do you suppose there's anything good to eat under Pete's desk?"

Martin wrinkled his nose in distaste. "From the looks of things, I don't think anyone's swept under there in years. If you want to have a look, you'll have to get down and do it yourself. I'm not about to go rooting around under there. My fingers would probably rot and fall off."

"Really?"

His face paled. "Victor! You wouldn't eat a part of *me*, would you?

I sighed. "I guess not. I'd be guilty of biting the hand that feeds me."

Martin was still trying to decide whether to kill me when Pete returned and tossed a pile of loose papers into Martin's lap, next to my feet. "We seem to be short on file folders around here, so don't lose any of that stuff, OK?"

There wasn't much to read, and it didn't add anything substantive to what we already knew. Martin scowled. "It's odd that nobody saw anything."

"You'd be surprised how little people notice in a public place. Unless the kid was putting up a fight, most people would assume that she was leaving to go home. Hell, even if she *were* fighting, they'd assume she was throwing a tantrum. These things were a lot easier back when kids were polite, quiet, and obedient. These days . . ." he shrugged.

Martin nodded. "Did you check out the ex-wife? If she came for the child, I imagine Alice would go quietly."

"*I* didn't do any of the questioning. This is Norm Pasky's case—remember him? Anyway, unless it becomes a homicide I'm staying out of it. Let's hope it doesn't become one."

Martin plucked the ransom note out of the pile of papers by its edge. "Any way to trace the note?"

Pete shrugged. "I'd guess not. These days the paper and the type face and so forth don't tell you much. Any laser printer can do a roman pica easier than you can tie your shoes. There should be a lab report in there, but I doubt that it'll do you any good."

Martin shuffled through the stack until he found the report, scanned it, then looked back up at Pete. "You're right. Nothing worth trying to follow up."

"All you can do is talk to his ex. Other than that . . . wait."

Candice Rosen—she still used her married name—lived in a modest rented house in a decent neighborhood. It was late afternoon and the setting rays of the Sun colored the houses on her street an angry reddish-orange.

Martin parked at the curb and carried me to the front door. She answered the bell so quickly that I got the impression she had been waiting by the door, perhaps for news of her daughter. She accepted Martin's explanation of who we were and what we wanted without comment, then invited us in.

"I must apologize for the house

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

looking as it does. We . . . I didn't ask Cal for very much in the way of furniture when we divorced."

I looked around the sparsely furnished living room, comparing it mentally to the threadbare relics Martin calls furniture. "Ma'am, I think it looks just fine," I told her.

She looked at me closely. "You speak?"

I took no offense; her tone was genuinely puzzled. "My name is Victor, ma'am. I work with Martin."

"What are you?"

I've never found a satisfactory answer for that question. Martin's uncle had been a crew member on a space ship that landed on my planet. Unfortunately, he went to his grave without telling anyone exactly which planet he had taken me from, so I have no way to go home. "In a way, ma'am," I told her, "I'm a kidnap victim, myself. I'm the only one of my species on Earth and no one has gotten around to trying to classify me."

"You're the only one? I thought there were hundreds of other aliens on Earth. Surely there's another one like you, somewhere."

"Not the one who counts," I said, thinking of my beloved Wanne, my para, hopefully safe back on my home world.

"I'm afraid I don't understand."

I have learned to imitate the human sigh. There are times when no other sound can communicate the proper emotion. "Don't worry, ma'am. It will be all right. Perhaps someday I'll get to go home." But this carried its own pangs—the thought of leaving Martin left me feeling hollow. Ah, if I could only have both Martin's friendship *and* Wanne's love, that would be the best of both worlds. In a way, I was relieved not to have to make the choice.

Martin, tiring of a story he had heard many times, broke in. "Mrs. Rosen, we'd like to ask you a few questions, if you don't mind."

She glanced back down at me, as if still uncertain as to how I fit in, before answering Martin. "Certainly. I don't know if I can be of much help, though."

"You dropped your daughter off at your husband's place on Friday afternoon; is that correct?"

She nodded. "Yes. Cal has her every other weekend."

"What time was that?"

"About four, maybe a little after."

"And he took her to the park?"

She shrugged. "I don't know. I wasn't with them, but she does love to go there."

"So you don't know what they do over the course of a given weekend?"

She shook her head. "No, not ahead of time. Alice usually tells . . . told," she sniffed and dabbed at her eye, but otherwise maintained her composure, "me about it after he brought her home on Sunday evening."

"Have you been contacted by the kidnappers?"

She shook her head. "So far, they've only sent the one note, and that went to Cal."

"If you don't mind my asking, are

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

you and your ex-husband on good terms?"

She closed her eyes, remaining silent for a moment or two. "I suppose that depends on which of us you ask. I thought we were doing fine. Then one day he asked me to move out. He said we had grown apart. I didn't feel that way, but what can you do? A relationship takes two people to make it work. I left."

"Was there someone else?"

"I don't know. I never tried to find out. I was too stunned to think things through at the time. At this point it's moot."

"Do you still love him?" I asked gently.

She shook her head; too quickly. Then she nodded slowly. "Yes," she whispered.

"And you'd like for the three of you to live together again," I added.

She nodded.

Martin was looking at me oddly, but kept silent. "Ma'am?" I asked.

She met my eye, but still said nothing.

"Did the police ask you if you had taken Alice?"

"They seemed to think it was possible that I had her. I don't. I wish I did, though. If nothing else, I'd like to know if she was all right."

Proper human body language is to nod sympathetically when something like this is said, but my body is too stiff to flex in that way. "I understand. Sometimes I wish I knew whether Wanne was all right."

"Wanne is . . . someone special to you?"

"Forever."

Martin was getting restless. "Mrs. Rosen, strictly speaking, we're working for your ex-husband, but since you and he are working towards a common goal, I'd like to leave my card with you. That way you'll have a phone number where you can reach us if anything happens you think we should know about."

She took a deep, uneven breath. "All right."

Then Martin realized that, since he was holding me with both arms, he did not have a free hand. "Um, Victor . . . " he began.

"Hold still," I told him and reached for his wallet with my tongue. Candice Rosen's eyes went wide as she watched my tongue slither around to Martin's back pocket.

He grimaced, then said quietly, so only I could hear, "Dammit, Victor, that *tickles!*"

Once I had his wallet free, I used my hands to extract a card, which I then held out to Candice. She accepted it gingerly.

As I slid his wallet into the outside pocket of his jacket, Martin said, "If anything happens, feel free to call us at any hour. Victor never sleeps."

She looked at me. "Seriously?"

"I spend my time reading. Once Martin goes to bed the house is very quiet and I find that I can concentrate more easily."

She glanced around her. "I know what you mean about it being

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

quiet. This house feels entirely different without my daughter in it."

I hadn't intended for her to make that connection. "I'm sorry. We'll do what we can to get her back for you."

On the way home, Martin was unusually quiet. I waited until we were inside his apartment before speaking. "What's on your mind?"

His lips compressed in irritation. "Don't you think you were laying it on a little thick with that maudlin act? I kept wondering if I should be playing the violin."

"I would have thought that it was obvious. I was taking her pulse, emotionally. It was a little overblown, I'll grant you, but in her state of mind, she's only receptive to three emotions—sadness, fear, and worry. I played on the sadness. It worked."

Martin carefully placed me in a semi-recumbent position on the couch. "OK, I'll accept that. You seem to know more about human psychology than most shrinks, but I wish you'd warn me before you launch into a fishing expedition like that."

Carefully, I began to probe my knee with the tip of my tongue. The swelling was no worse and may even have subsided a bit. Pete's magic rubbing routine appeared to have helped. "Martin, I have to play things by ear, the same way you do."

He flopped into the recliner, grumbling. "All right, all right. So what did you determine?"

"She doesn't have the girl."

He rubbed his jaw a moment while he thought. "Can you prove that?"

"Not exactly. The evidence is too circumstantial to stand up to a rigorous examination."

Martin snorted. "Try me."

"Well, for one thing, she didn't know where Cal and Alice were going. If she didn't know they would be at the park, then there's no way she could have taken the girl."

"That's the flimsiest excuse for logic I think I've ever heard." He held up his fingers and ticked them off. "One, she could have followed them to the park. Two, Alice could have mentioned that she was going to ask her father to take her to the park. Three, she herself could have suggested the idea to the child. Four, it's possible she could have an accomplice, perhaps a boyfriend, who would help her stake out any number of places where they might go. Five—"

"Martin, all of those are reasonable theories. There's only one problem."

"What's that?"

"Candice Rosen doesn't have the girl."

"Then where is she, garbage breath?" Martin demanded.

We talked and argued and discussed and wrangled and generally beat the subject to death until Martin was too tired to stay awake. Unable to leave it alone, I sat in the dark and mulled it over after he had gone to bed. He was quite correct, of course, it wasn't a question of where Alice *wasn't*, so much as

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

where she *was*. There were an infinite number of places where she wasn't, and my conviction that she wasn't with her mother, while useful in a legal sense, was useless in the practical sense.

After failing to determine where Alice might actually be using logic, I elected to descend into the trance state that I use when I am unable to find an answer any other way. Somewhere around four in the morning, I floated back to full consciousness and carefully let myself down to the floor. Testing my weight on my leg, I decided that it would get me as far as I needed to go.

I padded into Martin's bedroom and stood next to his bed. "Martin . . . Martin?"

He didn't even twitch.

"Martin!" I called, somewhat louder. Still no response.

I launched into Reveille, full blast.

Martin began to pummel his pillow, flailing at it with both fists. "I can't get out of my tent, Mr. Arken! There's a bear in here and it's . . ."

He sat bolt upright. "*Victor!* What in hell do you think you're doing, you addlepated idiot?"

"Trying to wake you up," I said calmly. "Get your car keys."

"Now?"

"Now."

He reached over and turned on the light on his night stand, temporarily blinding both of us. "What time is it?" he groaned.

"Time to get moving. I know where Alice is."

* * *

As Martin drove, I explained my theory. I watched his face from street light to street light, like a slow motion strobe, as he fought the idea, then began to see the symmetry of it. Grudgingly, he admitted each point, until I had laid out a complete, internally self-consistent scenario. He didn't like it, but he had to admit that it made sense.

Parking spaces were no problem in the wee hours of the night, so we parked right in front of Cal Rosen's apartment building. Martin turned to me and said, "Last chance, Victor. From here on in, we're either heros or fools. Do you want to back out?"

"Do you?"

He grimaced. "No, I guess not. Now that you've gotten me out of bed, I might as well see it through."

Once inside, the security guard looked at me strangely when I asked my key question, then scratched his head and said, "Stay put. I think I can answer that easily enough."

He took a ring of keys and unlocked an office across the hall from us. In less than a minute, he was back, carrying a large ledger. He was running his finger down the page. "Yup, there was an apartment leased on the fortieth floor just a week ago."

I gave Martin a trimphant I-told-you-so look and said, "You're aware that Cal Rosen's little girl was kidnapped this past Friday. We have reason to believe that the newly-let apartment may factor into the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

abduction."

The guard's eyes narrowed. He looked at Martin. "Honest?"

"Do you know if anyone has moved into that apartment?"

He traced across the page with his fingertip. "It doesn't say so here in the book. Normally they check this little box here when the tenant moves in."

"Good. If it's empty then surely you wouldn't have any objection to letting us look it over, would you?" Martin, for all his faults, can be convincing when he wants to be.

"Uh, well, I guess not."

"Naturally, you'll come with us. If it should turn out that the kidnappers are using that apartment for a base of operations, then we may need a backup."

Shrewd psychology on Martin's part. Considering that the guard's shift was probably one of the most boring jobs in the city, I'm sure he would have welcomed a blazing gun battle to relieve the monotony.

The elevator ride to the fortieth floor was tense. The guard kept slapping the black leather holster at his side as if to reassure himself that his gun was handy in case he needed it. As he walked down the corridor, he began to fiddle with the keys on his key ring.

When we reached the door, he tried the master key in the lock, but it would not turn. "The lock's been changed," the guard said, partly puzzled, partly annoyed.

"It's logical," I agreed, turning to Martin, who simply nodded.

The guard, thinking that he had cornered a gang of desperados, raised his hand to beat on the door, no doubt to demand their immediate surrender.

"Excuse me," I interrupted. "Do you mind if I try?"

His hand froze in mid-swing. He stared at me in confusion. "Try what?"

"The door, of course." Without waiting for permission, I slipped the tip of my tongue into the lock. "It's a new lock all right, the metal hasn't worn smooth yet," I commented as I felt out the tumblers.

The guard turned to Martin. "Is he doing what I think he's doing?"

"I'm picking the lock," I assured him. "But if you ever tell anyone you saw me do this they'll never believe you."

"Hell, *I* don't believe it," he said, perversely fascinated.

The lock was intricate, but I finally got it. "Martin, turn the knob while I hold the pins, the mechanism is too stiff for me to do it with my tongue."

I had forgotten that Martin's hands were full—with me, naturally. The guard saw this and turned the knob, reaching for his gun with his other hand.

"I don't think you'll need that," I told him. "Besides, if there should be legitimate tenants in here, you'll scare them out of their wits."

He nodded. "Right." He didn't look as though he was completely convinced.

We entered the darkened apartment. There was a cardboard box just inside the door. In the box was

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

a small purple stuffed horse, no . . . a unicorn. Martin whispered softly, "*Bingo!*"

The bedrooms were to our right. The first one was empty. The door to the second one was barely visible in the light coming from the hallway. It was closed.

"Open it quietly," I instructed the guard. "We don't want to frighten her."

"*Her?* You mean the girl's in here?"

"Open the door quietly," I repeated. He did so. "Alice?" I called softly, causing my voice to resemble her father's. "Alice?"

"Daddy?" came a voice from the small bed near the window.

"Jesus and Mary!" the guard breathed. "You were right." Then, louder, he called, "Are you OK, little girl?"

"Who's that? Daddy, who's with you?"

The guard flipped the light switch, revealing a disheveled little girl sitting up in bed, rubbing an eye with the back of one hand. "Daddy? Where's Daddy?"

"It's all right, Alice. We're going to take you home in a few minutes," I told her. To the guard I said, "You take care of Alice. I don't think there will be anyone else in the apartment, but you'd better check. We're going to get her father."

Martin and I stepped down the hall. Rather than put me down in order to knock, he simply thumped the door with his foot several times. A moment later, he asked, "Do you think I should knock again? I don't hear anything."

"No, I think he's coming."

Sure enough, the door opened to reveal Cal Rosen. He blinked in confusion. "What do you want?"

"Mr. Rosen," Martin said, "we've found your daughter."

Rosen leapt at us, using his forearm as a battering ram to push us aside. Martin went down hard on his backside, losing his grip on me in the process. I fell on the carpet.

Martin rolled to his feet, cursing. "You OK, Victor?" he asked, watching Rosen pounding down the hall towards the elevators, his house coat flapping.

"I've got a rug burn the size of a dinner plate, but nothing fatal. Let's go."

Martin picked me up and swung me under his arm. His hand was right in the center of the abraded patch of skin. It felt as though he was scraping my hide with rusty razor blades.

He skidded to a halt before the bank of elevators, staring in consternation at the indicator on the one Rosen had taken. "Who the hell ever heard of somebody taking the elevator to get away?" he demanded indignantly.

"You did," I told him. "Just now."

"So now what do we do?"

"Take the other one, fool! Unless you think you can run down forty floors worth of stairs fast enough to beat that elevator."

By the time the other elevator arrived, we had seen the indicator for Rosen's go all the way to the first floor without stopping. Unless

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

he was sneaky and rode it back up again, he was headed outside . . . somewhere.

Martin continued to fume as our elevator slid downwards. He slammed his fist against the control panel, exhorting the elevator to go faster. I could understand his frustration; being unable to do anything active in the pursuit of Rosen was irritating. Speaking of irritating . . .

"Martin, could you shift your grip a bit? You're hurting me."

He looked down. "Oh, sorry." He moved his hand a bit. "Victor, you're bleeding!"

"I expect so. I left a fair amount of skin on the carpet in front of Rosen's door."

"I . . . it's just that your skin looks so leathery."

"Maybe now you'll believe me when I tell you that the seat belt chafes me."

When the door opened on the lobby Martin bounded out, headed for the front doors, then brought himself up short. "Bet you anything that he went out the back way," he muttered.

"It's a cliché, but you're probably right."

We crashed though the back door into a dark alley. Not so much as a single street light relieved the gloom. Martin halted. "Damn, I can't see a thing."

I assumed that his eyes simply took longer to adjust than mine. "Go to your right," I said.

He started off at a slow walk with his free arm held out in front of him.

"Bear to your right, you're about to hit the wall."

"How do you know?"

"I can see it."

"Where do I go now?"

"Keep going forward. You're doing fine."

"I feel like the headless horseman of Sleepy Hollow," Martin complained.

"Yup," I agreed. "You're carrying all your brains in your arm." Out of the corner of my eye, I saw a faint flicker of movement. "There he is!" I cried.

"Where?"

"Can't you see him?"

"Not a thing."

It was surely the strangest capture in history. I gave Martin directions until he literally stumbled over Rosen's feet where he was hiding behind a dumpster, hoping until the last instant to escape notice.

In all the years I had been on Earth, and after all the adventures Martin and I had been through, I had never been bandaged before. I didn't like the sensation. Then again, I don't wear clothing, either. The entire concept of being bound up by cloth is foreign in every sense of the word.

"Martin, when can we take this thing off?"

"When you quit bleeding."

Marie smiled at me in a kindly fashion. "Would it help you forget the bandage if I gave you that head of lettuce now?"

I couldn't help it. I started salivating. "You remembered!"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Martin turned his head slowly to stare at her. "You brought a nasty, moldy, rotten, slimy, evil-smelling head of lettuce over here and put it in *my* refrigerator?"

"Naturally. The only way to serve lettuce is properly chilled."

"But it might," he waved his hands in the air vaguely, "spread germs or something."

She shook her head sadly. "When's the last time you looked in your refrigerator? There are cultures of every microorganism known to man in there. Where *did* you get that orange gunk growing on the pan on the second shelf, anyway?"

"That's a chocolate pie. . . ." He subsided into uneasy muttering.

"How long has it been in there?" she persisted, not satisfied to let him off the hook so easily.

"It's the one you made me for my birthday," he admitted guiltily.

She stared. "Your birthday was six weeks ago, you idiot! You haven't eaten it *yet?*"

He was trapped and he knew it. If he said he liked it, she'd want to know why he hadn't eaten it. If he said he didn't like it, she would probably make him wear it, orange fungus and all.

I came to his rescue. "Marie, he thought it was so good he wanted me to share it with him. Of course, the only way he could do that was if he let it spoil a bit before serving me my slice."

She looked from one to the other of us before throwing up her hands. *"Men!"* Then she frowned at me and threw up her hands again. *"Aliens!"*

Martin threw me a grateful glance and tried to change the subject, "Don't you want to know about Rosen?"

She pursed her lips while she decided whether or not to give the two of us a good tongue lashing. "Oh, all right. I can tell you're bursting to tell me how clever you were."

"It wasn't me, it was Victor."

Her expression softened somewhat. She turned to me. "Don't you ever get tired of bailing lover-boy here out of tough spots?"

"He does have his uses. He had to drag Rosen out from behind the dumpster. Considering that Rosen outweighs me four to one, I couldn't have done it."

She turned and walked into Martin's tiny kitchen to stir the spaghetti sauce that was simmering on the stove. "So how did you know that Rosen kidnapped his own daughter?" she called back over her shoulder.

I answered, "He said the ransom note said 'the usual' things. It bothered me. How would he know what the usual things were? Why was he so blasé about the note? There were a few other oddities, too. For instance, he sounded defensive about the ransom being a half million dollars, and the fact that it happened to be his approximate net worth. From then on, it was trivial. If he had her, then he'd want her close by so he could check on her easily. Since he lived in an apart-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ment building, the obvious thing to do would be to put her in another apartment, preferably on his floor. Turns out that he told Alice that he loved her so much he'd gotten her a whole new bedroom. She thought it was great."

Marie leaned out of the kitchen. "But wasn't that dangerous, leaving her in there by herself?"

"He had the stove and the oven—anything dangerous—turned off at the circuit breaker. Other than that, he tucked her into bed and was certain to be there when she woke up in the morning. It was really quite safe. And of course, it was only temporary."

"But why did he hire a detective in the first place?"

"Typical amateur criminal mentality. He was trying to gild the lily. He thought it would look more impressive if he could hand his ex-wife a report from a detective that said that his daughter was nowhere to be found."

"Let's see . . . then the bogus ransom note was just a cover to liquidate everything he had. He would have waited a discrete period of time, then moved away with the half million, and Alice, and started a new life with no one the wiser." She leaned out of the kitchen again, licking a wooden spoon. "Am I right?"

"On the money," Martin said, then coughed gently to let her know he expected applause.

She scowled and brandished the spoon at him. "That was terrible."

Martin sighed. "I'm still smarter than Rosen. He was headed for his car. The only thing was, he had panicked when he saw us and ran out of his apartment without his car keys."

Marie frowned. "But couldn't he have just gone back inside after them?"

He nodded. "Certainly. He was going to, but Victor saw him hiding in the darkest corner of the alley."

She looked at me. "I'm not sure I understand. If he was in a dark corner, how did you see him?"

I picked at one edge of my bandage—false modesty. "You're aware that I don't sleep, right? It's no secret that I wander all over the apartment at night. Everyone has always simply assumed that I have good night vision. I do, of course, but I can also see into the infrared."

"So you saw Rosen by his *body heat?*" she demanded.

"You and I look at that hot spoon that you're holding and we assume that we're seeing the same thing. It never occurs to either one of us to get the other to describe what they see in detail. Martin and I had never been in a situation where it had come up before."

"Makes me wonder what other things you can do," Marie said.

I flickered a few inches of my tongue at her. "That's for Wanne to know and you to find out," I teased.

Marie got so flustered that she dropped the spoon and darted back to the safety of the kitchen. "Is the little girl all right?" she blurted.

"Oh, she's fine," Martin said. Then he chuckled. "As a matter of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

fact, she's in love with Victor."

This brought Marie back out into the living room. "*What?*"

"After we got Rosen under control, we went back upstairs. Alice was getting scared by this time, because she didn't really know the security guard and she still wanted to see her father. Victor came to the rescue. I put the two of them together in the corner and Victor kept her amused by imitating every single animal at the zoo. When her mother arrived, Alice wanted to take Victor with her. She thinks he's cute."

"She wanted her mother to buy me from Martin on the spot. She was not pleased when she found out that I wasn't for sale. I fear that the child has been rather spoiled," I noted grimly.

"Speaking of getting spoiled, little buddy, you're going to have to do your own walking for a while. You've nearly pulled my arms out of their sockets," Martin said.

"I am *not* spoiled," I said indignantly. "That was a medical necessity. My knee was hurt . . . by you, I might add."

Martin snorted. "Maybe so, but I didn't hear you complaining about getting the royal treatment."

"Well, no," I admitted. "It was rather nice."

"Supper time," Marie called. She placed a dinner plate with the rotting head of lettuce on it at one end of the table. "You will be eating with us, I assume," she said to me.

"I'd like to, yes. Will one of you get me down off of this chair?"

They looked at each other and laughed.

"Spoiled," Martin said.

"Spoiled rotten," Marie agreed. ■

There are those who would misteach us that to stick in a rut is consistency—and a virtue, and that to climb out of the rut is inconsistency—and a vice.

Mark Twain

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE FASHION OF PHYSICS

Marianne J. Dyson

The photon is a woman
deciding what to wear,
A patterned or a solid dress?
The answer isn't clear.

If you peek while she's deciding
she'll choose one just for you,
But when your back is turned again
she'll try on something new.

Even with a closet full
she'll not be satisfied,
For styles often cancel out
or wrongly coincide.

She'll slip into a dressing room
to test out something sheer,
Then change into a rigid mood
unhappy with the mirror.

Eventually she is arrayed
to interact with you,
But she arrives, to your surprise
in not one gown, but two!

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE ALTERNATE VIEW John G. Cramer

SCIENCE AND SF IN JAPAN

Japan has achieved a quasi-mythological status in the USA as the one country that is doing things correctly in the development of new industry, in science and education, and in planning for the future. Like most generalizations, this picture is simplistic. Japan is a complex and fascinating country. Above all, it is different (but not necessarily better) in interesting ways.

At the end of August, 1992, my wife, daughters, and I spent 15 days in Japan on the occasion of my son's wedding in Hokkaido. During this trip we attended the Japanese National Science Fiction Convention and spent a day at the Japanese National Laboratory for High Energy Physics (KEK) in Tsukuba, the Japanese "science city" near Tokyo. This Alternate View column contains my impressions of science fiction and science in Japan.

© 1993 by John G. Cramer

Tokyo—The 90-minute bus ride into Tokyo from Narita Airport gave us a distant look at the new Japanese Disneyland and many direct views into Tokyo office buildings from the elevated expressway. It was about 6:30 P.M., but every office we saw was bustling with activity at a time when most business offices in the USA would have been empty for an hour or more. The Japanese workers do work long hours and seem to be working hard, even toward the end of the day. On the other hand, Japanese culture dictates that men in the business offices do the intellectual work, while the women employees wear uniforms, do the menial jobs, and serve tea to the men. This tradition must ultimately limit the productivity of Japan by using effectively only half of the potential work force. Long hours may not be enough to compensate.

In late August Tokyo is almost unbearably hot and humid, and, with a population of almost 9 million, it has incredible automobile traffic jams. The only efficient modes of travel in Tokyo are the large subway system and the separate system of aboveground trains. We came to prefer the trains over subways because of the sightseeing. From the elevated tracks they provided wonderful and bizarre night views that gave a definite *Bladerunner* feel to the vast metropolis.

This impression was enhanced by a visit to Tokyo's "Electronics City"

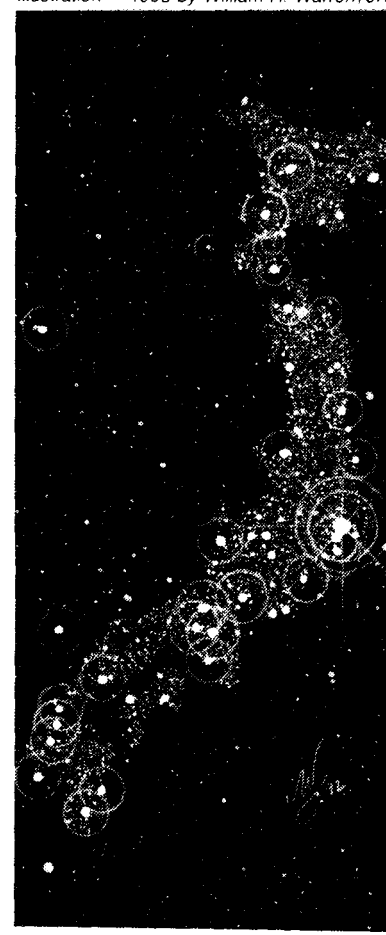
LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

near the Akihabara train station. The square area several blocks on a side is honeycombed with thousands of shops selling consumer electronics, electronic toys, and electronic parts, components, and test instruments. The depth and variety of electronic items for sale was stunning. The Japanese love electronic gadgetry and their domestic market supports the production of a vast array of consumer items, many not sold outside Japan. But the thing that made the most impression on me was not the finished consumer products, but the vigorous market in electronic components and parts.

I'm an experimental physicist with much experience as a designer and user of complex electronics. At Akihabara there were city blocks of small shops selling capacitors, connectors, resistors, LSI chips, power supplies, circuit boards, and other parts. The implications of this market in components for the concentration of technical expertise and level of activity still amaze me. I know of no comparable concentration of expertise and activity in the USA, even in Silicon Valley. The Akihabara area of Tokyo has a concentration of not only retail and wholesale shops, but also many firms that design and manufacture electronics, a vast mainspring of the Japanese economy concentrated, in a tiny area. The vigor of this industry, its throb and drive, can be experienced at first hand in Akaihabara.

HamaCon—Yokohama is a port and industrial city, about 3 million in population, and a short $5 train ride from the center of Tokyo. In recent years the Yokohama waterfront has been transformed from a purely industrial area to an attractive site for meetings and expositions. It has good rail connections, a large convention center, and world-class hotels. The Yokohama Grand Intercontinental Hotel, where we stayed, is an amazing

Illustration © 1993 by William R. Warren, Jr.



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

work of architecture that rises like a massive curving shark-fin from the edge of Tokyo Bay.

It was the site of this year's Japanese National Science Fiction Convention, HamaCon. The meeting rooms were large and there was plenty of space for a large convention. The hotel was an excellent site for an SF convention in every way, except that "convention rates" are a US innovation that has not spread to Japan. Since a dollar's worth of yen has about ⅓ its US buying power, HamaCon was a *very* expensive convention.

It was attended by several thousand Japanese fans. My daughter Kathryn and I were the only American SF professionals there. This gave us a certain instant glamour and many opportunities to meet Japanese fans and SF professionals. Except for the dominance of the Japanese language, HamaCon was very much like a big US convention in its structure and organization. There was multi-track programming, an art show, several TV/video rooms, a large dealer's room, a room for laser-tag, and many sessions of role-playing games. Despite the language barrier we were able to communicate and to have a good time. We were even asked to address the assembled multitudes (with concurrent translation) at the impressive closing ceremonies. HamaCon was a large and well run convention, and we all had a good time there.

I have admitted bias toward *written* SF. From my point of view, there was too much emphasis on media-related SF at HamaCon (but I also feel this way about most SF conventions in the USA). On the other hand, the Japanese have raised animation to a high art form. The ideogram-written language of Japan leads to a very visually-oriented culture. On the trains and subways my informal survey shows the count of businessmen reading printed books and reading comic books to be about equal. Comics are abundant (and amazingly thick) in Tokyo bookstores, and a display of written SF books is relatively rare. Therefore the strong emphasis on comic books and characters at HamaCon's convention programming, in the art show, the masquerade, and in the dealer's room was to be expected. The HamaCon closing ceremonies culminated with an elaborate computer-animated video showing the convention hotel and surrounding complex of buildings transformed into a vast space ship, launched into space by a multi-stage launch vehicle, and ultimately transformed into the starship Enterprise entering warp drive. The preparation of such an expensive and elaborate video for an SF convention has implications that I still do not comprehend.

Japanese SF—My hard SF novel *Twistor* is being translated and published in Japan, and this new development led to several discussions with Japanese editors and writers on the state of SF in Japan. The consensus is that Japanese SF is in a "down" period of contraction and retrenchment. A decade ago five SF/fantasy magazines were published in Japan. Now there

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

is only one. In the bookstores SF novels are losing shelf space to mysteries and international intrigue novels. There are no SF specialty bookstores in Japan. While SF is very popular in comic book form, it is less so in written form. The many young fans of comics have not, as they matured, made the transition to novels and magazines, as might have been expected.

Translated works of US authors are very popular in Japan. This is particularly true for hard SF. Hogan, Forward, and the Three B's (Bear, Benford, Brin) were prominently mentioned during our discussions with fans at HamaCon. In the area of fantasy, translations are also popular, but Japanese writers of fantasy compete more directly and successfully with their US counterparts. Translations of SF works in the other direction, from Japanese to English, are still extremely rare. The Japanese editors with whom we talked considered that several new Japanese writers had produced interesting works which might do well in the US, given good translation and marketing, but there were no plans to move in this direction.

Tsukuba and the KEK Laboratory—Tsukuba is a new town built in the 1960s in what had been a national forest on the southern slopes of Mt. Tsukuba northeast of Tokyo. It is a planned city with wide streets, created to be the focus of Japanese science. In Tsukuba are many research and development laboratories of Japanese manufacturers, as well as federal institutes which provide centers for a wide variety of scientific and research activities: agriculture, environmental sciences, transportation, inorganic materials research, space sciences, disease prevention, building construction, and so on. We learned, however, that the physical closeness of federal and commercial labs has not promoted the cooperation and close ties that had been expected.

KEK at Tsukuba is the Japanese National Laboratory for High Energy Physics. It has three primary machines, a 12 GeV proton synchrotron, a 30 GeV on 30 GeV electron-positron collider (TRISTAN), and an electron storage ring operated as a "photon factory."

TRISTAN is a ring accelerator 3 kilometers in circumference using 700 electromagnets. It just fits within the boundaries of the KEK site. Its relatively low design energy was a "calculated risk" that didn't pay off. It was believed, when the machine was designed, that its 30 GeV beam energy would be sufficient to produce significant quantities of Z^0 and $W^{\pm}$ mesons for study. As it turns out, 30 GeV is too low. Experiments are restricted to the energy region below the Z/W production threshold, while most of the interesting physics lies above this threshold. The "T" in TRISTAN originally stood for "Tri-beam," and the plan was, if necessary, to install a proton ring in the same tunnel as the electron ring and to produce Z^0 and $W^{\pm}$ mesons with electron-proton collisions (as is done at the HERA facility in Hamburg). However, the Japanese Ministry of Education, Science,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and Culture (MONBUSHO) has killed this plan. The "T" in TRISTAN has now been redefined to stand for *something* else.

The proton synchrotron (PS) at KEK has been developed into a good source of "strange" K mesons (the matter-antimatter combination of a *strange* and an *up* quark) and used to study the interactions of kaons with matter. The kaon beams at KEK are the world's best, and Japanese groups are leaders in this area of physics.

The electron injector for TRISTAN is also used to supply electrons for the KEK photon factory. When energetic electrons change direction while passing through a magnetic field, they tend to lose energy by producing photons of light as "synchrotron radiation." This process can be used to produce intense, monochromatic, and highly directional beams of light that are very useful in materials and atomic physics studies. The KEK photon factory is an electron storage ring (an elliptical ring of magnets and acceleration sections) with more than 25 beam stations where light ranging from far ultraviolet to soft X-rays is produced and used in experiments.

After the impressive show of electronic prowess at Akihabara Electronics City, I had been expecting something comparable at KEK. I didn't find it. The computers were less impressive than those in my own laboratory in Seattle. The experiments were well designed and constructed, but not notably better in their command of technology than our experiments and others at CERN. Somehow, the Japanese dominance in consumer electronics is *not* spilling over, as I had expected, into their physics capabilities.

I do not understand why this is the case, but I can venture a guess. The Japanese scientific funding agencies have been very tight-fisted with physics funding, except in cases where a strong tie to industry can be demonstrated. One would think that this would promote good cooperation between industry and physics, but the evidence I saw suggests that it has had the reverse effect.

The physics goals, underfunded without industrial ties, have been relegated to second place behind industrial tie-ins, which have become primary. The result is that Japan is actually getting *less* out of its investment in physics, with a few exceptions, than is the case in the US and Europe. This syndrome is of particular interest because there is presently a move in the US Congress and in the NSF leadership to place more emphasis on industrial ties in US basic science activities.

What can I conclude from these observations? Japan is a vigorous nation which has chosen a path notably different from ours. The difference is what makes it such an interesting place to visit. We can learn from the choices the Japanese have made and their outcomes, but we must be careful to understand the mistakes as well as the successes. We must not oversimplify. It requires a lifetime to understand a culture. ■

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

A CALL FOR PIONEERING THE SPACE FRONTIER

In 1969 two Americans realized the impossible dream by stepping ashore on the surface of another world. The triumph of Apollo set in place the technological capability to undertake the greatest adventure in history—the expansion of humanity from our home planet outward to the rest of the solar system and worlds beyond. It did not happen. Instead, the legacy of Apollo was abandoned, much of our space capabilities forsaken and plans for establishing Lunar bases and the human exploration of Mars forgotten.

The Space Exploration Initiative, a presidential initiative supported by NASA, will return America to the courageous course of exploration envisioned during the Apollo era. It reasserts the pioneering spirit and vision that helped build our country by calling for a return to the Moon—to stay—and pushing onward to the human exploration of Mars.

The Space Exploration Initiative will

. . . assure American leadership in science and technology. It will provide a new objective for the defense and aerospace industry, drive the development of multitudes of engineering innovations, create hundreds of thousands of skilled jobs in high-technology areas, and inspire untold numbers of students to take their education seriously and recognize their own potential.

. . . increase our knowledge of the universe, the solar system and ourselves beyond imagination. Arrays of telescopes on the Lunar surface will enable us to divine some of the greatest secrets of the universe. The exploration of Mars may reveal whether life is unique to Earth or common in the universe, telling us something of the true nature of life itself. Resulting breakthroughs in physics and biology could radically advance the human condition.

. . . eventually make available resources from space that can solve some of the most pressing problems we face here on Earth. Solar power from space, fusion reactors powered by fuels found on the Moon and useful metals found in vast quantities on asteroids can be used to ease the burden of Earth's development.

The Earth is just one world, but our solar system contains dozens, and the universe at large billions. It is clear from one good look at a star-riddled night sky that the future will belong to the society that dares to venture forth from its cradle Earth into the vast domains beyond. We owe it to our children and those of the future to see to it that they have their place among the stars.

Therefore, we the undersigned enthusiastically endorse the Space Exploration Initiative and urge Congress and the Administration to provide full support for all projects required for its implementation.

	NAME (PRINT)	ADDRESS	SIGNATURE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Return to: The National Space Society, 922 Pennsylvania Ave. S.E. Washington, DC 20003, Phone (202)543-1900

LICENSED TO GPO ACCESS
ELECTRONIC REPRODUCTION PROHIBITED

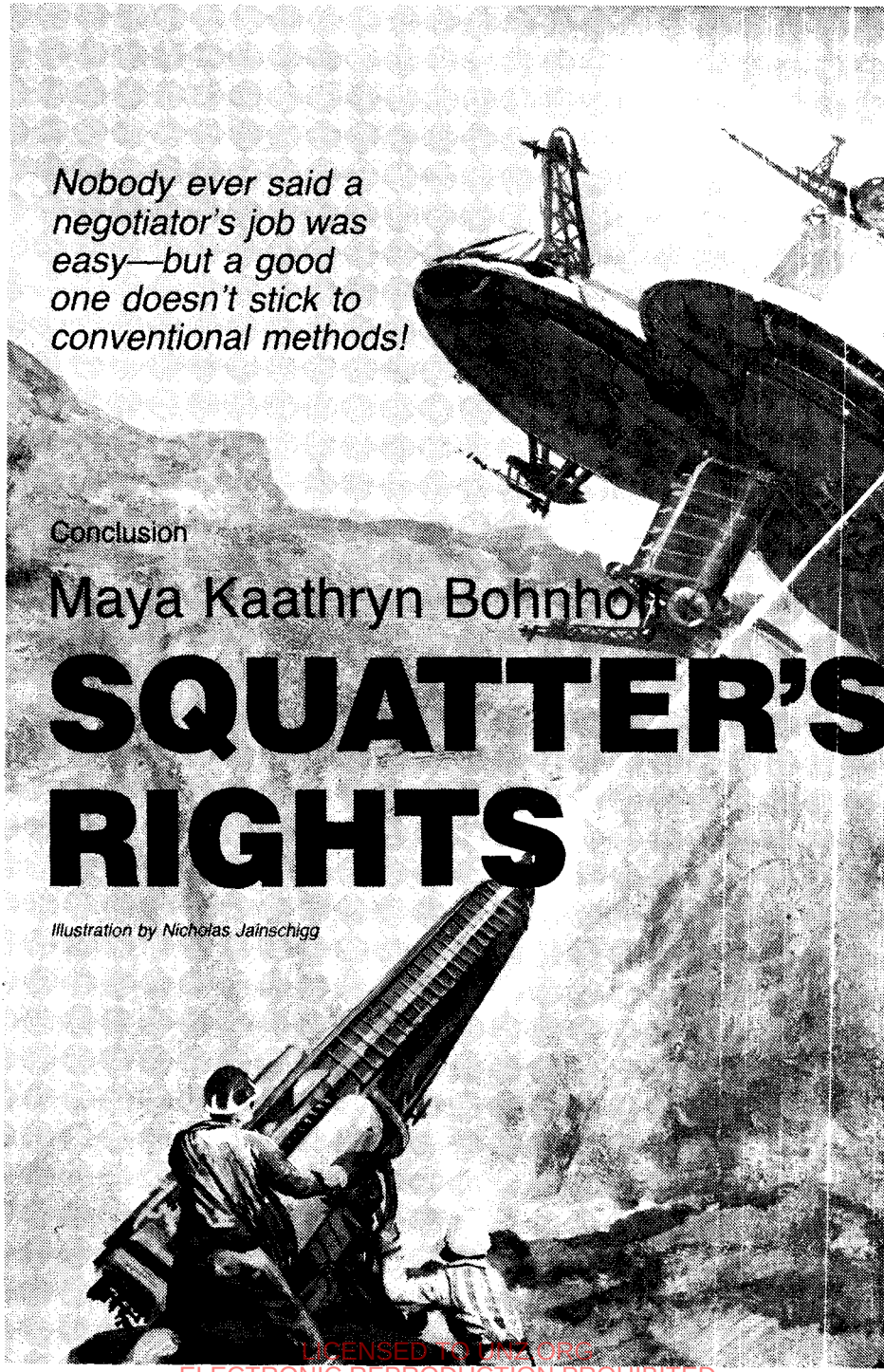
Nobody ever said a negotiator's job was easy—but a good one doesn't stick to conventional methods!

Conclusion

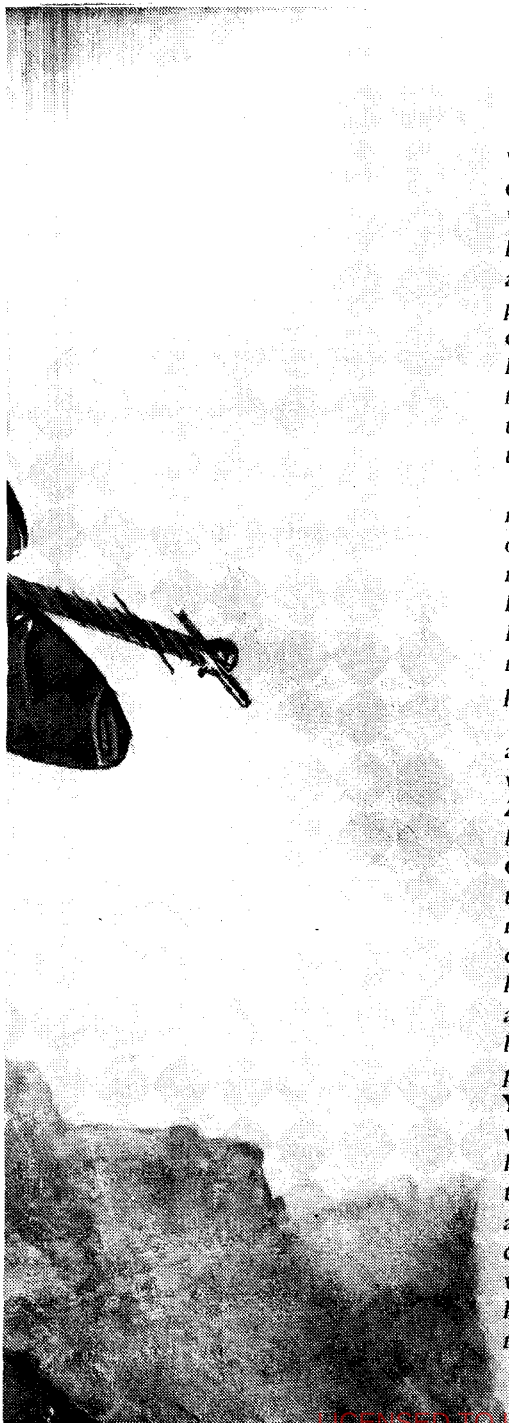
Maya Kaathryn Bohnhoff

SQUATTER'S RIGHTS

Illustration by Nicholas Jainschigg



LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



SYNOPSIS

When **Danetta Price**, *CEO of Tanaka Corp. goes to the colony world of Velvet to establish trade, it appears her stay there will amount to a pleasant working holiday. But the unexpected occurs. A contingent of aliens, calling themselves the* **Tsong Zee**, *lay siege to Velvet with an armed fleet. Their one and only demand: that the humans, who have been living there for decades, leave.*

Colonial governor **Joseph Bekwe** *is at a loss to deal with a combination of alien implacability, a language barrier, and human panic and hostility. Danetta Price urges the governor to let her call in Tanaka's quirky crack negotiator,* **Rhys Llewellyn**, *anthropologist and xenologist.*

Bekwe resists, not wanting to put any more people in harm's way, but when communication with the Tsong Zee reaches an impasse and the public seems ready to panic, he gives in. Coached by Danetta, who suspects that title and function have a unique meaning to the Tsong Zee, Bekwe convinces the visitors that Rhys is a highly regarded shaman—someone as uniquely suited to speak for the humans as they are to speak for their people. Enter Rhys and his assistants, **Yoshi Umeki** *and* **Roderick Halfax**, *who study the Tsong Zee's peculiar language and break the communication barrier. Negotiations immediately take an unexpected turn. Rhys deciphers the Tsong Zee story to reveal a claim that Velvet was their homeworld—a homeworld they nearly destroyed centuries before*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

through deep-seated tribal prejudice. Now, they return to reclaim it at the end of a self-imposed 2,000 year exile to the past of the neighboring world of Kamorg. They are adamant that the planet, which they call Tson, cannot be shared with an alien race. They are not alone, for there are xenophobes on both sides. A small but powerful human faction, led by corporate mogul **Harris Beneton**, *threatens to push the situation to violence.*

When asked for proof of their extraordinary claim, the Tsong Zee produce artifacts which are impressive, but inconclusive. They also cite an ancient inter-tribal legend that hints at the existence of a great White Shrine buried in or under the chain of mountains to the southeast of the human colonial city of Haifa. They know the Shrine exists, the Tsong Zee say, but they do not know where it is.

Probing the suspicious tale, Rhys learns that, of the five tribes of Tsong Zee that once inhabited Tson, each was given a unique Key to the Shrine by a great spiritual leader named **Kalkt**. *One Key is missing, lost when the tribe Gondatrura was destroyed en masse in the failure of their timeship.*

Pursuing the matter further, Rhys learns that the Key was not actually possessed *by the missing tribe, it was* in *the missing tribe. For the Keys to the White Shrine are sensory keys—sight, sound, taste, smell, touch—pieces of a puzzle impressed upon the members of each tribe as a means for their eventual unity. It was Kalkt's intent that only when members of the five tribes worked together in empathic harmony could the Keys be used to lead them to the Shrine. By their account, the Tsong Zee are a living puzzle with a missing piece.*

While many of the humans around him express their outrage, Rhys is drawn to a reluctant belief that the Tsong Zee are telling the truth. His reluctance stems from a guiding policy of the Interplanetary Collective of which Earth is a member; humans may not inhabit a world against the will of its native race.

Rhys's dilemma: Does he aid the Tsong Zee in their search for the White Shrine, thereby sealing the fate of the colony, or does he allow Governor Bekwe to summon a Collective Security force?

As Rhys ponders his predicament, Harris Beneton makes the decision academic. He forces a confrontation with the Tsong Zee by sending one of his freighters through their blockade in an attempt to alert Collective Security to the siege. The Tsong Zee ground the vessel in a great show of strength and call Rhys to an accounting.

During the frustrating session that follows, Rhys learns that the Tsong Zee have a unique way of negotiating—a state of empathy so complete that they almost literally trade places emotionally and mentally. He becomes obsessed with the idea of being able to communicate with such clarity, and begs the Tsong Zee to consider letting him attempt entering the state. But his obsession must wait; Yoshi Umeki discovers that **Alleen**

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Goodyear, *the Lieutenant Governor, has been aiding Harris Beneton in a plot against the Tsong Zee.*

PART II

"People are clamoring for Tsong Zee blood. Beneton's made sure they've been depicted as militaristic monsters—conquerors. Those folks out there in the courtyard are spoiling for a fight. After a while they're not likely to care who they're fighting or how badly they hurt them. Is that what you wanted to happen?" Governor Bekwe turned his back on the window of his office and gazed at the occupant of the chair on the opposite side of his desk.

"No, Joseph. Of course not. I just thought that Harris Beneton had the best chance of getting a message to Duet. You were . . . honor bound to cooperate with them. He wasn't. I did what I thought was best. I don't hate the Tsong Zee. But I don't see any hope of them sharing Velvet with us. I've put it to them, Professor Llewellyn's put it to them. Every time we broach the subject, they explode. I didn't see any other option." Alleen Goodyear did not look at Bekwe. Neither did she look to her right and left where Rhys and Danetta stood.

"There's a good possibility they've a claim on this world," said Rhys quietly. "You know that."

She did look at him then, her eyes spilling resentment down her flushed cheeks. "They ruined it! They abandoned it! If it were a child, someone would have taken it away from them."

"Someone did. And now that they've mended their ways—or so the legend goes—they're being given a second chance. Ms. Goodyear . . . Alleen, humanity has had an awful lot of second chances in its long and checkered career. Can we say the Tsong Zee don't deserve one?"

"I've lived here for fifteen years," she countered. "I love this place. I was going to be married here in a month's time. I would have raised my family here. My whole life is here, dammit! I've no place else to go! Why can't they just stay wherever the hell it is they claim they've been for two millennia?"

"Because they love this place, too. Or at least a good many of them do." *And if they could only be persuaded to share it. . . .* Rhys glanced at Joseph Bekwe. "May we let Alleen go now? I've something else to discuss with you."

"In a moment. I have one more question for her. Alleen, do you have any idea what Beneton's next move might be?"

She was silent, head drooping over her lap, tears staining the bright silk layers of her skirts.

"Alleen, please. We don't want anyone to be hurt by either the Tsong Zee or Beneton's mobs. Those people are not behaving rationally right now. They're vandalizing the Complex, breaking the windows out of cars and lower floor offices. Security is having a damnable time controlling them. If you have any idea what he plans to do next—"

"He doesn't confide in me, Joseph. I'm just a source of information."

"What sort of information, Alleen? How might he use it?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

She raised her head then, and glanced up at the ornate antique clock on Bekwe's office wall. She fidgeted, glancing at people arrayed around her, her eyes never once touching their faces. "He wouldn't hurt them, I don't think," she said.

"Hurt whom?" asked Danetta. "Hurt the Tsong Zee?"

Again, the glance at the clock. She pressed her lips together ferociously. "Dammit, I . . . I gave him the time the Tsong Zee would be leaving the Complex to return to their ship. I showed him . . . where they'd exit the building. And I gave him the driver's name."

Rhys glanced at the clock. "My God, it's 1700 hours now!" He bolted for the door, causing it to shoot noisily aside. Aware only vaguely of others behind him, he made the levtubes in the foyer and stepped into one, demanding a high speed drop to Sub-level Four.

He had no idea what he would do when he got there or what he would find, and he had no time at all to ponder it. In a split second, his fall ceased, leaving him abob in the tube, while a perfect voice said, "Sub-level Four. Carpark sections AA to—"

He didn't wait to hear more, but vaulted from the lift, right into the midst of the clustered and waiting Tsong Zee.

His timing couldn't have been better—or worse, depending on whom one asked. The driver of the Speakers's vehicle, half in, half out of the long, silver-blue Mercedes Grav Mark II, glanced from Rhys to the Tsong Zee and back again. He got out of the car and closed the door. The highly tinted windows reflected the faces of the Tsong Zee in warped clarity, making them look like elongated tarbabies.

"You must be Dr. Llewellyn," the driver said and flashed a smile that failed to reach his eyes. "Can I do something for you, Doctor, or have you just come to say good-bye?"

"Actually, I think good-byes would be a little premature." Rhys turned to face Javar, who stood beside him watching the exchange with interest. "I think perhaps you should come back upstairs with me."

"Why?" asked Javar, stiffening. "What has happened?"

"We think someone may try to—" Rhys's explanation was cut off as the doors of the Mercedes flew upward to reveal two armed men wearing half-masks. *Ridiculous*, Rhys thought, *they look like raccoons*. "Costume party?" he said aloud.

"Lynch party," said the driver. "Get in the car—all of you." His eyes took in the steadily staring Tsong Zee who had barely reacted to the threat. Rhys realized their attention was riveted on the weapons as if they'd never seen anything like them.

"Get in!" repeated one of the masked men, gesturing with the muzzle of his gun. Every Tsong Zee eye followed it.

"I think you'll find your plans have been changed, gentlemen."

Joseph Bekwe's voice came from Rhys's right, causing him to turn in unison with the Tsong Zee. The colonial governor was not alone. Half a dozen security guards had come out

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of the tubes with him.

Rhys Llewellyn paid scant heed to the dinner laid out on the small round conference table in Joseph Bekwe's office. He slid into his seat between Yoshi and Rick, took a deep breath, and reached for a cup of coffee. "The Tsong Zee are on their way back to their ship. They wish me to express their gratitude for our intervention in their abduction. Although I'd swear Keere thinks we staged it."

"Are they grateful enough to leave Velvet and go home . . . or at least grant us squatter's rights?" Joseph Bekwe took a long pull on his coffee, grimaced and sighed. "God, I needed that! I'm going to be an old man when this is over."

Danetta patted his knee. "Shall I get you a lap-rug, dear?"

"I'm not quite ready for that, yet, but you could get me a solution to this crazy mess." He looked over at Rhys who was toying with the food on his plate. "Well, Dr. Rhys? How grateful are they? Enough to negotiate our staying on Velvet?"

"Grateful enough," said Rhys, staring absently at the governor's coffee cup, "to allow me to deal with them in kind."

Bekwe frowned. "What, precisely, does that mean?"

"Well, it has to do with a . . . new style of negotiation I hope to learn." He smiled wearily and explained the Trade.

The governor's reaction to the idea was emphatic, monosyllabic, and decidedly negative. Danetta's was similar, though more protracted and laced with indictments of several of Rhys's Scottish ancestors. Rhys wheedled, cajoled, pleaded, invoked the advancement of scientific knowledge, and finally ended up at the bottom line.

"The wall at our backs, friends," he told them, "is that there may be a Collective force of unknown size on its way to us at this very moment. It could *arrive* at this very moment. We may be faced with a war we don't want."

"They won't come in blazing," argued Governor Bekwe reasonably. "They'd assess the situation and—"

"And if the Tsong Zee take their approach as a hostile act? What then? The Tsong Zee may very well respond with force and a battle will ensue. Governor . . . Joseph, these people have been planning their return for *two thousand years*."

"*If* they're telling the truth."

"All right, if they're telling the truth. Do you think they're just going to give up and slink off without a whimper because we haul out a mighty stick and shake it at them? I'm a Scotsman by blood. And I'm well aware of what it means to feel the sacredness of a bit of land. To feel it pull you, own you, demand your loyalty and, if necessary, your life. The history of Scotland is rife with the push and pull between native and invader. We're like the English here, Joseph. We've come to this goodly place and built up our castles and our villages and we've not been invited. And just as when the English invited themselves into Scotland, ignoring the explicit invitation to leave may

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

lead to bloodshed. We can't turn a deaf ear to them."

"No one's suggesting we do that," objected Danetta. "And there's one important difference here that *you're* ignoring. Your Scots ancestors didn't abandon their lands, then come home expecting the new tenants to move out. Some of the humans on Velvet are more native to it than the Tsong Zee. *They* were actually *born* here."

"Aye, granted. I'm just asking you to look at this from their viewpoint. They may have been physically absent from Velvet for two thousand years, but spiritually a good many of them have visited it every day. Their hearts and souls are here."

Danetta sighed in exasperation. "Dammit, this is absurd. You can't . . . trade places with them, you're not Tsong Zee. You're human. 'East is east and west is west and—' "

"Now don't you go misquoting Kipling to me, ma'am." Rhys pointed a stern finger at his CEO's nose. "Read the end of that scrap of rhyme and you'll discern that it states the opposite of what folks usually drag it out to support. I'm going to try this thing."

"*Why*, Rhys? Because it's never been done?" guessed Danetta.

"Aye, well. That adds sauce to the meat. But, its chief allure is that it can help settle this. If we can meet on common ground, if I can just see behind those beautiful, inexpressive faces, *if* I can convince them that we're not so very alien. . . ."

"That's such a long shot," argued Danetta.

His lips curled into a smile and she knew the cause of caution was entirely lost. "Aye," he said, "I've rarely seen longer."

—5—

He was alone in the council chamber with Brasn and Javar—no apprentices hovered. The dimly lit room was decorated to Tsong Zee taste with items of ceremonial significance —totems and tribal artifacts forming a circle around the two negotiators, Javar and Rhys, who sat cross-legged, face to face. Javar's artifacts, which included a sense-cube, a huge hunk of purple crystal, a picture painted on fine pieces of dark, shaved wood, were arrayed in a fan behind Rhys. Rhys's—a set of pipes, a bodrun, a walking stick of Scottish pine, his purple fetish bag—were spread in the same pattern behind Javar.

On his knees beside them, Brasn prepared to mediate. He lit a small brazier containing an herbal incense determined to be safe for human inhalation, the effects of which were described as relaxing. There was a drink, as well—a barky smelling liquid of deep amber which both parties sipped from a shared cup.

The chamber flickered in the glow of Tsong Zee wicks; the incense curled between human and Tsong Zee; the ritual drink warmed their bellies and loosed their thoughts, and Brasn began to chant.

Rhys was feeling most relaxed, his academic curiosity sitting idly in some distant aerie, observing. The incense smelled fine, like burning pine needles and crushed cedar. The room was close and warm and he loved the feel of his thick woolen kilt lying

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

warmly across his legs like a great plaid cat, the sporran curled, kitten-cozy in his lap. He felt his left arm rise and thought absently that Brasn was lifting it. His hand uncurled, flattened itself and pressed against a warm, yielding surface that seemed to fit it almost perfectly. His right hand followed, finding its own mate, pressing close.

There was a darkness, a whirl of colors, of voices, of sensations. Hot sun, warm sand, bleached landscape. The crisp, winey tang of an arid wind. That gave way to vivid greens, a swirl of breezes laden with scents pungent and delicate. A ripple of laughter. Joy.

The sequence repeated itself. The sepia world giving way to the world of rainbows. Joy. Here was home and that other place, that colorless place. . . .

But home was not as they had left it. It was inhabited now by delicate, multi-hued people who made their capitol at the base of the Holy Yanna Mountains and refused to leave. This was understandable. Tson was a beautiful world. *But the Humans simply must understand that it belongs to us, alone.*

That small, distant academician, high in his objective roost, crowed with delight and shivered with pleasure. He was Javar T'lath-al Var of the Skycraft Guild of the Tribe Gondavar. His parents were T'lik and Luvar. His work and passion was the science of time and space. His mate-beloved was Slai Alau, a Musiccraft Guilder. He had grown up in a city called Brolath in the mountains above Kamorg's capitol, Tsonvar. He'd studied to be Speaker and was elected to that illustrious station in his fifteenth year. The Return was his mission. His Tribe had a Key. This song. These notes. The Three Sisters.

He had led the planning for the journey, so grateful to have been born to this generation—to the generation of Return. His father had tested the theories and mechanics, his uncle had built the ships and he had outfitted them—tuned their machinery and their magic, readied them for their journey down the corridor of time, across the distance between Kamorg and Tson. Shadayan, Shadavar, Shadamela, Shadarau. He knew a stab of anguish. There would be no Shadatrura. There would be only—

Rhys's dissociated self ceased its jubilation.

Four ships. Four *unarmed* ships.

There was a whirl of sensation that left Rhys speechless and dizzy. He came to himself with an abrupt thump, his arms lying limply in his lap, his mouth agape. Across from him, Javar gazed back with a similarly ludicrous expression.

"Holograms?" Rhys stared at the two Tsong Zee incredulously.

They glanced at each other, Brasn's eyes growing larger, if that was possible, than they already were. Javar lowered his head and nodded.

Rhys barely noticed the human gesture. "But the energy damping web—"

"Is a purely benign tractor beam intended for moving freight pods. This is the first time we have ever used it as a weapon. It is, in fact, the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

closest thing to a weapon that we possess. Our arsenal, as you experienced, is empty. To put it bluntly: We are bluffing."

There was a sharp bleat from the room's comlink just as Javar's communicator emitted a hailing whistle. While the Tsong Zee dealt with that, Rhys answered the comunit by the door.

It was Joseph Bekwe with a terse message. "Beneton's message got through. The fleet's in."

Rhys turned to face the Tsong Zee. He could tell they'd gotten the same message from their ships. "Good God," Rhys murmured, "what now?"

Rhys Llewellyn gazed at the uniformed gentleman in the holo-column assessingly. Admiral Sanchez was an imposing fellow—bisonlike and bemused. So much was obvious from the peculiar train of expressions that chugged across his broad, bearded face.

"You still maintain that you are *not* under attack?"

"That is correct, sir. We are negotiating the situation very carefully so as to forestall that event. As Governor Bekwe indicated, the message that summoned you was not authorized by his office."

"Yet the message we received was urgent and quite specific. Velvet was under attack by hostile OROM forces. The visual evidence supports this. I can *see* the OROM ships for myself. Just as a casual observer, gentlemen, I'd say this planet was under siege. I was warned that the government had been forced to . . . cooperate. That I would find you reluctant to act."

Rhys and Bekwe exchanged glances; Beneton didn't miss a trick.

"I expect Mr. Beneton used a less neutral term," Bekwe surmised. "Harris Beneton—the . . . gentleman who contacted Collective initially, is a private citizen with a large financial interest in Velvet. He felt his interests were threatened by the Tsong Zee and he . . . panicked. He violated the direct orders of this office and undertook to contact Collective himself. He has also subverted my lieutenant governor and attempted to kidnap the OROM ambassadors. And he has gone out of his way to foment discord and even violence among the colonists."

"Foment discord? I understood that Beneton was a *military* leader on Velvet."

"We have no military leaders on Velvet, sir. We have a colonial police force and a port authority. Mr. Beneton is not connected with either organization in any way. He is the CEO of BeneCon, a large Velvet-based consortium—"

"*Have* you been influenced by the OROM, Governor?" Sanchez asked quietly.

Again, Bekwe and Rhys brushed gazes. "The Tsong Zee—the OROM involved—claim that Velvet is their homeworld. They wish to reclaim it."

"They *what?* No, don't repeat it. I heard you the first time. Sonofabitch. That puts a different complexion on things. Although it doesn't change the fact that a Collective colony is under siege. I'm at your disposal, Governor. What would you have me do?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"While the Tsong Zee do have a rather large fleet," said Rhys, superstitiously crossing his fingers behind his back, "they are loathe to use it—a fact easily explained once you hear the history of their race."

"We can muster enough firepower to handle them, if we have to."

Bekwe took a deep breath. "Let's all pray that won't be necessary."

"Beneton thinks it's necessary now."

"Naturally. Harris Beneton doesn't want the Tsong Zee to be able to prove this is their homeworld. He wouldn't deed Velvet, or any part of it, back to the Tsong Zee if they *could* prove it."

"You mean they *haven't* proven it, yet?"

Bekwe glanced at Rhys. "I know what you say you experienced, Rhys, but I have to be honest here." He turned back to the holo-column. "No, sir. They have not proven it to the satisfaction of this administration."

"Then—"

"However," he held up a restraining hand, "Professor Llewellyn is of the opinion that they are telling the truth. He . . . entered into, em, private negotiations with one of the Tsong Zee leaders and came away convinced of their sincerity."

"Sincerity isn't a title to this planet, Governor. If they can't do better than that—"

"There's a chance," interjected Rhys quickly, riding a sudden wave of inspiration, "that they can. The form of negotiation Governor Bekwe mentioned may present a means by which the Tsong Zee can locate a particular artifact. An artifact which will prove their history to be more than fabrication. I beg the time to aid them in that."

Rhys felt for a moment as if the two pairs of eyes boring into him—one pair real, one holographic—would leave four neat, smoking little holes.

"You're volunteering to *help* the OROM? Any particular reason for this remarkable generosity?"

"Justice. If this planet belongs to them—"

"If it belongs to them, why aren't they in possession of it?"

"That's a long story, Admiral. And there are any number of people who could share it with you. What I am asking, on behalf of the Tsong Zee, is the time and opportunity to prove that it *does* belong to them."

The admiral's eyes studied him long enough and unwaveringly enough to make him sweat. Wool is not comfortable when one is sweating, and Rhys fought the unbearable urge to scratch such places as are not to be touched in company. He bit the inside of his lower lip.

"I'd like to talk with this Mr. Beneton," said Sanchez finally. "I assume you have him under arrest?"

Joseph Bekwe nodded. "Quite definitely, Admiral. He won't be making any more unauthorized TAS transmissions."

The admiral's brushy eyebrows swept upward. "Always assuming he's the only subversive you have to worry about. I wouldn't be too certain that putting one man behind E-grid will restore order. If he's got folks as scared as you say—"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Bekwe grimaced. "Your point is well-taken, sir. How do you propose to speak to Mr. Beneton?"

"I'd like to shuttle down. Just me and a handful of men. No weapons. Can you clear that with the OROM?"

Bekwe glanced at Rhys, who shrugged. "We can but try," he said.

Admiral Sanchez faded from the column, leaving Bekwe and Rhys staring at a potted Terran evergreen.

"I'd like to proceed, if I might, Governor," Rhys said after a moment.

Bekwe's brow knit into a fabric of anxiety. "Rhys, the admiral has a point about Beneton. He's just one head of the BeneCon hydra. He hasn't done all that—" he jerked his head toward the window behind them "—all by himself. He's got associates. He's bribed at least one government employee—the Tsong Zee's driver—and compromised another. I'm not sure I can guarantee your safety."

"I'm not asking you to."

Joseph Bekwe fell into his chair and rubbed a hand over his face. "Dear God, we stand to lose so much. *All* and any of us—human and Tsong Zee."

"I'm hoping otherwise. I'm hoping we'll actually gain from this . . . in a lot of ways."

"Care to clue me in?"

"The Tsong Zee objection to sharing Velvet with us was that we're . . . too different."

"You mean inferior."

Rhys inclined his head. "They believed, until today, that we were so alien as to be incapable of dealing in kind—trading places. They were wrong. I Traded with Javar and he with me. It wasn't as successful a Trade as he might have done with a Tsong Zee, but that might be partly a function of inexperience on my part. I know that he came away with more of me than I did of him." He didn't mention that one of the things he came away with could change the entire complexion of the situation, and knew a gnawing guilt at the omission. "It's something like reading the Tsong Zee sense-stones. You miss a lot when you're not practiced at picking out the sensory details. You just get hit and, initially, overwhelmed with the wealth of input. What I'm hoping is that my experience with Javar will make them think again about our differences—make them reconsider sharing this world."

"What's your plan?"

Rhys grinned ruefully. "What plan? I'm ad-libbing."

"You didn't tell them?" Javar's eyes rested, unblinking, on Rhys's face. "Why didn't you tell them?"

"I thought it would destabilize the situation. And I wanted to buy time to find the Shrine."

"How are we to do that?" asked Keere.

Rhys sat in his council seat, facing the Tsong Zee delegation. "How would you do it if you had the missing Key-Holder?"

"We would Trade," said Brasn. "All five Speakers would place their Keys in the confluence of thought. The Gondatrura Key-Holder—the Walker—would act as Key-Master. He or she would then see the beginning of the Journey. We would go to the place

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and again, we would enter the Trade and offer up our Keys. We would walk the path they showed together, bound in the Trade state."

"But we cannot do this, now," explained Keere, "because there is no one to provide the visual Key. No one to assemble the pieces into a whole."

"Couldn't any of you be the Key-Master?" Rhys asked, feeling frustration begin a slow crawl up his spine.

Javar shook his head an unprecedented three times. "We were not given that, Speaker Rhys. We assemble the normal, moment to moment input as all beings do, but this is not that. In the state necessary to the Trade, linked to these others, with our collective purpose being to locate the Shrine, my mind will concentrate overwhelmingly on its own Key: sound. This is true for every Gondavar Tsong Zee. Brasn's mind, and the minds of his fellow Tribe members, concentrate on the feel of the experience; Keere's mind is attuned only to the fragrance; Parsa knows only a taste. Only the Gondatrura, with their visual Key, were prepared to assemble the input from the others and find their way to the Shrine."

"Pardon, Brasn," said Rhys, "but I must ask a delicate question. Have no members of your Tribes inter-bred?"

"Of course. One of the first changes in our culture was the encouragement of inter-Tribal bonding. But just as a child does not receive from her copper-eyed and blue-eyed parents one copper eye and one blue, so the child of a mixed pair does not receive a little of one Key and a little of another. He or she receives one or the other. This determines the Tribal affiliation of each child. Javar, for example, is the product of a union between a Var and a Yan. But he is Var by Key."

Fascinating as that was, Rhys was ready to begin tearing the hair out of his head. "What process was used to implant these Keys? Is it anything like the Trade?"

"It was a process that embraced both the physical and the metaphysical, Speaker Rhys. It was a process created for a specific purpose by the (true) Speaker of the Gondavar and the Tsadrat of the Gondayan. We no longer know—"

"How to do it," Rhys finished with him, nodding. The Tsong Zee were nothing if not methodical. There seemed to be a trend: Technologies developed for one purpose and one purpose only; time-altered space vehicles that only went from one set of time-space coordinates to another on a sliding scale; a programming of the Tribal limbic system that could only handle one type of data. It was amazing that they'd actually conceived of using their tractor web as a ersatz weapon.

Rhys's heart kicked over rapidly, tripping on one of those thoughts. Something had grasped his subconscious's attention and shaken it. What—?

"*I'm* not programmed to any particular stimulus," he observed, his eyes on Javar's gleaming face. "Perhaps *I* can assemble the Keys."

Not surprisingly, it was Keere who uttered the first word of rejection. "You're not even Tsong Zee! He's not even Tsong Zee!" he repeated to Ja-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

var as if he might not have heard. "He has no Key of his own. How can he be the Key-Master? This is absurd!"

Brasn and Javar were all but ignoring the younger man's complaints. Their full attention was on Rhys Llewellyn.

"He did Trade with me," said Javar. "Fully. More fully than I imagined possible. He even took thoughts from me which I had believed to be hidden."

"But he can have no ability of his own!" objected Keere. "He was merely a passive participant."

"We cannot know that," said Brasn. "His mind is receptive. We have proven that. And we know he is to be trusted."

"How? *How* do we know this?" Keere had gotten to his feet and begun to pace the outside of the circle of chairs, his apprentice practically glued to his side.

"He thwarted an attempt to harm us," returned Parsa, "and he hasn't told them we are weaponless. I believe we can trust him. Surely, we must try. Javar, you Traded with him. Can he be trusted?"

Javar's eyes pinned Rhys to the air. "I believe so," said Javar. "And I agree with Speaker Parsa. Time may be short. Our ships are in danger. Perhaps our very lives, if this Trader Beneton has set others like himself in motion. We must attempt it. To do otherwise is to give up hope."

Brasn merely canted his head to one side and held it there for emphasis.

Keere was incensed. "You allow yourself to be manipulated! Let us forget this insanity. We have tried to recover Tson and we have failed. It was a ludicrous idea to pass ourselves off as warriors and I willingly admit my fault in its conception. Now, let us go back to Kamorg and pick up our lives again and go on."

Brasn turned to the younger man with an inscrutable gaze. "If that is what you wish to do, you are free from your commitment as Speaker. We ask only that you provide a suitable replacement."

That cut deep, there was no doubting it. Keere's agile body was shaking with suppressed emotion beneath his bright, silken garments. "That will not be necessary. I will abide by the decision of the group. I merely wish to make my own feelings known."

Brasn made a small gesture of acceptance. "Then, if Keere is prepared to join us in our madness, let us proceed."

The Trade was a bit more complicated with five people involved. It was Brasn's apprentice who performed the mediator's function, making certain the participants, seated in a circle which reminded Rhys of nothing so much as a seance, were maintaining physical contact. The other apprentices—Rhys's included—looked on with concern, skepticism, hope, or anxiety.

Incense curled about the group in the dimly lit room, tendrils forming palpable links. Rhys could almost believe the information passed along those smoky ways, airborne, wafted between the individual islands now sharing a sea. Melody took him first,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

wrapping itself around him, cool and light. Three Sisters. It was a song given to the Gondavar, written to their memories, passed along like blue eyes or copper hair.

The fragrance was winy, pungent, like . . . lakeweed or rushes. Water gurgled over rocks now, framing the fluting melody. He tasted the dampness on the breeze and the sweetness of blossoms . . . they tasted of honey—of nectar. Warm rock was beneath his feet and his hand rested against a rough, curving surface, also sun-warmed. Sun kissed his left cheek and a cool breeze wiped the kiss away.

An image formed behind his eyes, hazy at first, but clearing as if released by morning mist. A stream rushed by below and to his left, and from that side, sun reached him. The breeze blew off the stream and curled up along the steep, rocky scarp on which he stood, right hand resting on the flank of a boulder. Flowering foliage tumbled over the slope, giving up a rich fragrance. The slant of the sun told him he must be facing southeast, the cast of the surface beneath his feet laid a roadbed of cut stone, worn smooth with use. It faded into purple shadow ahead, swallowed in the narrow wedge cut between two slopes.

"Mountains," he said aloud. "An old road of stone, running tight against a wooded slope, a stream . . . Three Sisters." He opened his eyes and the sensory pool evaporated. The Tsong Zee were gazing at him inscrutably.

"The Three Sisters," said Javar, "are three of the Holy Mountains of the Yanna range. We have assumed that the Shrine lies somewhere among them."

"There are more than three mountains in that chain," Rhys reminded him. "Which three are the Sisters?"

"The three closest to the valley would seem most likely," observed Parsa.

"You're not sure?"

The Tsong Zee woman's mouth twisted into a wry grimace, her lower lip pad jutting at a tilt through her bifurcated upper lip. "They are only legends to us, Speaker Rhys. We left rather hastily and had tasks more critical to our survival than mapping the continent. There are some partial maps, others done from memory—they would indicate only that the Sisters are part of the Yanna range."

"The road is our best clue, is it not?" asked Brasn. "The books of the Gondayan speak of a highway to the Holy Communities."

Rhys snapped his fingers, making the Tsong Zee jump in perfect unison. He heard Yoshi, seated behind him, stifle a giggle. "Dr. Kuskov's cobbled way! One of our scientists, Searcher Kuskov, came across a roadbed in his excavations. If we start with that, we may be able to locate a spot where it parallels a stream on the eastern flank of a mountain."

"Ah!" Parsa sounded relieved. "Perhaps this will not be as difficult as we anticipated. Speaker Rhys seems to lend visual imagery to our Keys most readily."

"We haven't found this place yet," noted Keere sourly. "We have a fleet of ships poised to strike us, and even

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

if we locate this place before they become openly hostile, that is still only the first step in the journey."

"What's the next step?" asked Rhys. "Another Trade?"

Javar gave his head a single shake. "The Trade is to be continuous. It must be. The Key-Holders are to be in physical contact with each other and must maintain the state necessary to the Trade as they move toward their goal. In this way as the Key-Master uses the Keys to open the path to the Shrine, the other Key-Holders continue to present their Key sequences."

Rhys frowned. "Sequences?"

"Of course. The Keys are much like the notes of a song. They move forward continually—changing, creating new inversions."

"But the accoutrements necessary to bring about the state. . . ." Rhys indicated the totems and burning wicks, the incense and dusky atmosphere.

"Merely for ritual purposes, Speaker Rhys," replied Brasn. "Although, it is helpful to create a meditative atmosphere. We are quite capable of entering the Trade state anywhere at any time, given a suitable amount of quiet or superior concentration where quiet is not available."

"You mean you were meant to walk down this road, holding hands, continually connected in the Trade?"

"Precisely."

Ludicrously, a song popped into Rhys's mind, all but shattering his solemnity. "Follow the yellow brick road. Follow the yellow brick road!" exhorted a chorus of munchkin voices. He was struck by the absurd image of himself and the Tsong Zee skipping along a mountain trail chanting, "Lions and tigers and bears, oh my!" while Harris Beneton circled above on a broomstick. *Not funny. They're programmed genetically to do this, you're not.* He had barely been able to concentrate long enough to piece together the vague images he did assemble. A continuous, meticulous application of mental energy. . . .

"I'm not sure I can carry on the rapport while engaging in physical activity," he told them frankly. He tried to shake the sudden weight from his drooping shoulders, straightening with an effort. "Of course, we must try."

They did try, but it was beyond Rhys Llewellyn's capacity to remain in the Trade state while doing anything more than sitting in silent meditation.

"I am sorry," he said after half an hour of futile struggle. "I simply can't do this. We need more time."

"Perhaps this War Leader Sanchez will give us more time," said Parsa hopefully, her coppery eyes intent on Rhys's face.

"We are out of time already," said Keere. "We have failed. No amount of time can change that."

In the silence that followed that dour pronouncement, Yoshi Umeki cleared her throat delicately. "Pardon me, sir, but if I understand this correctly, you need the full range of sensory images generated by the Tsong Zee Key-Holders fed to you in such a way that external distractions are

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

neutralized."

"Yes, Yoshi, that's precisely what I need." *And little hope I have of having it.*

"Well, sir, what about establishing an entorhinal feedback loop of some sort?"

Rhys turned to stare at his second assistant. "Go on."

"Well, sir. If we could do an EC scan of each Tsong Zee entorhinal cortex—or its equivalent structure—and download their bursts of carrier wave activity to *your* cortex. . . ." Her eyes glittered like a pair of marcasites set in gold.

"Bypassing the receptor neurons," Rhys murmured, the idea catching fire in his head. "But it would have to go both ways—be a true looping effect. The Tsong Zee have to know what I'm 'seeing' to trigger the next part of the Key sequence."

"That can be done."

"How did you think of this?"

She shrugged. "My sister's a psychtech therapist on Jalcin. She specializes in Burst Therapy."

"But the equipment—EEG arrays, the scanner—?"

Yoshi was nodding. "Most medical facilities have EC monitor and feedback systems in their trauma units, sir. I only question whether a colony of this size would have state-of-the-art equipment."

"We'll have to find out, won't we?" Rhys scrambled to his feet and was immediately caught in a strong web of Tsong Zee gazes.

"Pardon," said Javar with commendable patience, "but could you kindly explain what you have been saying?"

Rhys colored, realizing suddenly that he and Yoshi had lapsed into English during their digression. "I *am* sorry," he said in Tsuru, "but if you will indulge me a moment, I need to check our situation."

Their situation, he discovered, was precarious. Informed that Collective Security forces hovered offworld, a large number of colonists, failing to be reassured, demanded that they take immediate military action against the invaders. In the midst of this paranoid frenzy, a volley of laser fire had been sent from a drill cannon at one of Beneton's mines. It had been aimed, more or less accurately, at the one Tsong Zee vessel that still hovered (or appeared to hover) on the outskirts of the city. That it had caused no visible damage had sent a further tremor of terror through the colony. In expectation of reprisal, the Collective Fleet was put on yellow alert.

To further complicate matters, Admiral Sanchez was meeting with Harris Beneton and Alleen Goodyear personally, and the governor's staff had been advised to take no action until further notice. That advisement, Rhys discovered, extended to him as well. He and Yoshi had to get Joseph Bekwe's personal permission to use the comlink for the call to Haifa's main medical facility.

The equipment they needed was available, was state of the art and could, with the governor's permission, be made available to them, along with the technicians rated for its op-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

eration.

Rhys turned to Governor Bekwe and ran into his first roadblock.

"I'm not sure I should give you permission for this exercise, Rhys." The governor's red-rimmed eyes mirrored his ambivalence. "The admiral has . . . recommended that I keep you on a tight leash and, frankly, I'm torn. Torn between my conscience and my conscience." His mouth twisted grimly. "I took my oath to protect this colony. These people are my responsibility. They're in danger. My instincts say I should snap and snarl at anyone who poses a threat to them. Right now I'm not sure whether that's the Tsong Zee or BeneCon. I can empathize with the Tsong Zee desire to retrieve their homeworld. It'd be a damn rude howdy to go back to Earth someday and find a bunch of complete strangers camped out there." He shook his head. "But if I let you help the Tsong Zee prove their claim, the colony may lose. *You* may lose, Rhys. Beneton's not a military strategist, but he sure as hell seems to think he is. I sat in on his interview with Sanchez for a while. He's awfully smug for a man who's under arrest. And that episode with the laser cannon—"

"Aye. Stunts like that could turn this place into a battle ground."

"I don't think Sanchez will allow that. He's no buckeroo."

"I wasn't thinking of Sanchez, and you know it. I used the word 'stunt,' but you and I both know it was much more than that, potentially. Whoever fired that cannon had every intention of blowing their target out of the sky. Sanchez couldn't stop them. How can

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

we believe he can stop the next attempt to explode this situation? Joseph, right now we're at a stalemate. I think I have a shot at convincing the Tsong Zee we can . . . communicate with them. That we're men and women, just like them. The packaging may be different, but we're enough alike in the important things."

Rhys tried to keep his voice from betraying the tide of adrenalin that was pushing it. Sanchez could appear at any moment, hopelessly entangling them. "The Tsong Zee aren't warlords bent on annihilating humanity, Joseph. All they're asking for is a chance to prove they're not lying. That they've some right to call this planet home. And if we give them that chance, who's to say it won't influence them to let the colony be? This is a big enough planet, I think, for two races to exist on it side by side."

"They're poised for war, though, Rhys. That fleet of theirs is huge, well-shielded and well-armed." Danetta's voice came quietly from the other side of the office and Rhys, instinctively wanting to blurt out the truth about the Tsong Zee "fleet," blushed and bit the inside of this cheek.

"Aye, it's hard to prove good intentions when both sides are armed to the teeth," he agreed. "But take my word, the Tsong Zee have no desire to harm anyone." He turned to her beseechingly. "Try to appreciate my position in all this, Danetta. I'm human and I've no wish to see the colonists go homeless. But I have to do what I think is right. And it's *not* right to block the Tsong Zee from at least attempting to prove this is their world we've taken root on. The Col-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

lective was founded on principles of justice for *all* the member races, not just humanity. And, aye, I know the Tsong Zee aren't members—but they could be—and good members, too. Contributing members. They've done things with their technology and their art we've not dreamed of." He turned back to Bekwe, holding out his hand, palm up, begging. "Please, Governor . . ."

"Not without Sanchez's blessing, Rhys."

Rhys fumed. "But the time! The longer this situation drags on, the longer it can be boiled down to our word against theirs—"

Danetta came around to face him. "Rhys, for once in your life will you please do something by the book? This is no time for renegade tactics. Sanchez is not a mutant militant. Let's get his agreement on this."

"Get my agreement on what?"

Admiral Sanchez stood just inside the doorway of Joseph's office. His entrance had been silent and unnoticed and Rhys couldn't help but think he'd made it purposefully so. He shook himself. *Now, Llewellyn, that wasn't bad, it was just cagy.*

Governor Bekwe stood. "Admiral, Professor Llewellyn believes he can help the Tsong Zee locate an artifact that will prove they once inhabited this planet. With that proof, perhaps we can enter into some more meaningful dialogue with them. Dialogue based on mutual trust."

"Before anyone attempts to prove anything," said Sanchez, "I think you should know that Mr. Beneton is painting you, Governor, and you, Professor, as the bad guys in this scenario. He claims he has been wrongfully incarcerated and harrassed for attempting to protect this colony from invasion. At least one member of the governor's staff has supported his claim and has accused you, Dr. Llewellyn, of being a subversive element."

Rhys swore in silent passion. "Beneton is lying, Admiral. He's purchased his support, and what he couldn't buy with money, he bought with fear. All I ask is a chance for the Tsong Zee to prove that Velvet is their homeworld."

"By finding this White Shrine?"

"Yes."

"Beneton says it's a military complex. That it contains the weaponry that laid waste to this planet in the first place. And that if they find it—"

"That's the most ludicrous pack of walla I've ever heard. Surely you don't—"

Sanchez held up his hands. "I didn't say I believed him, Professor. I'm just telling you what he said. As far as I'm concerned the man is a dangerous nutter. But frankly, I'm not certain the same can't be said of you." He let his eyes underline the comment with a sweep of Rhys's attire.

"The White Shrine is a religious center. A Holy Place."

"Are you willing to bet your life on it, Professor?"

"I am."

"Well, I'm not. Not after seeing the archaeological data. What I've seen makes the existence on Velvet of a race like the Tsong Zee a very long shot."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Harris Beneton has shown you only what he wants you to see, Admiral. Tell me, have you interviewed Dr. Kuskov?"

"Kuskov? Who's that?"

"He's the colony's senior archaeologist," said Danetta over Rhys's shoulder. "Professor Kuskov is the man you want to discuss pertinent archaeological data with, not Harris Beneton. Beneton has a huge financial interest in Velvet. He's an empire builder, not a scientist."

The admiral nodded with bearlike patience. Rhys had the feeling he'd stand there all day, implacable, until he got his way. "Be that as it may, I simply must insist that we proceed with caution."

Rhys tried not to make any impatient gestures. "I'm not asking for anything that would violate a cautious approach, Admiral. This is difficult to explain to someone who hasn't experienced it, but the Trade I made with Javar—one of the Tsong Zee Speakers—basically made me privy to his innermost thoughts. The Shrine is just that—a Shrine and a repository of Tsong Zee knowledge."

Sanchez gave him a long, appraising look. "Has it occurred to you, Professor, that the Tsong Zee may have allowed you to experience exactly what they wanted you to experience?"

Rhys flushed with sudden heat. "No, sir. It had not. They were so reluctant to even allow me to attempt the Trade."

"That could have been a ruse."

"I . . . I suppose I don't have a suspicious enough nature."

"No. I guess not." Sanchez studied him a moment longer, then waved a hand at the door. "All right, Professor Llewellyn. Your argument for settling the uncertainty surrounding the Tsong Zee origins is well-taken. Proceed, but for God's sake—and your own—proceed with caution."

Rhys was nearly dumbfounded. He'd been readying his next verbal volley, gearing up for a long, arduous campaign, and Sanchez had foiled him by agreeably raising the portcullis. He shook himself. "Thank you, Admiral. We'll leave immediately." He turned to Joseph Bekwe. "Governor, will you contact the Medical Center?"

"Immediately."

As he moved to do so, Sanchez turned wary eyes to Rhys Llewellyn. "Medical Center?"

"I'm not Tsong Zee," said Rhys. "My communication with them will have to be enhanced electronically." He raised his hand against further questions. "It's a long explanation, Admiral. And yes, I will be cautious."

The ride to Haifa's Medical Center was tense but mercifully brief, giving Rhys only enough time to offer a passionate prayer that no one would reveal their whereabouts to the wrong parties.

At the Center, Rhys parked Roderick Halfax and the Tsong Zee apprentices in a waiting room then, with Yoshi's aid, briefed the Lab Chief, Dr. Plaatz, and his technicians, explaining in as much detail as possible what they needed to accomplish. Then the procedure was described in careful detail to the Tsong Zee.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"These little jewels," said Dr. Plaatz, holding up a tiny gleaming cabochon, "are the individual sensors for the EEG Array." He gestured at the compact machine with its impressive bank of monitors that sat in the center island of the lab. "Attached to your heads," he feigned pressing one behind his ear—"they will monitor the carrier activity from the region of your brains which deciphers scents, tastes, sights, sounds and feelings, and feed them through the same device on Dr. Llewellyn's head directly to his entorhinal cortex. In this way, what you are sensing will come to him without interference from external input. It will override external input as long as he's receiving a burst of information from you. Then, when he visualizes something as a result of your input, his sensor will carry that image back to each of you, triggering—presumably—the next step in the key sequence."

"Which will then return to you," Javar said to Rhys when he had completed translating Dr. Plaatz's words. "Most impressive. This technology would be of great assistance in the treatment of individuals who are mentally debilitated or have difficulty achieving the state necessary for the Trade." His eyes were on Brasn, who canted his head in agreement, his own gaze fastened intently on the sensory "jewel" in Rhys's hand.

"It is a technology we would gladly share," said Rhys. "But now, unless you have reservations or questions . . . ?" He swept the group with a careful gaze, resting most uneasily on Keere. All responded negatively. "Well, then. Let's make a quick test and pray it works. I believe we have a mountain to climb."

Harris Beneton glanced up at the security scanner trained on him from behind its wall-mounted lens. At an unseen security station on the same floor, Colonial Sergeant Greg Lederman glanced quickly away.

As if he can see me, he thought disparagingly. He couldn't be seen—he knew that, yet still felt uncomfortable whenever the man behind the empty desk looked directly at the scanner.

He had done nothing for about an hour but sit and doodle on odd bits of flimsy sent down by the governor's secretary. On this newest piece, Lederman could make out a bunch of little pyramids, a stick figure and something that looked like a woman's face. He blinked and squinted to see if he could recognize anything else. OK, that could be a stick or a baseball bat or . . . nah. Now, *that* was a bolt of lightning.

Lederman nodded, wondering what a psychologist would make of the scrawls. Just as he was beginning to warm to that new facet of the game, Beneton grimaced, wadded up the flimsy in obvious disgust and threw it into a refuse chute.

So suddenly he's a neat-nik, Lederman thought, glancing at the little pile of earlier doodles tossed haphazardly about the floor of the cell. Oddball. He sighed. Back to boredom.

—6—

The breeze was brisk along the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

northeast flank of Mt. Carmel. It played havoc with the Tsong Zee's colorful sashes and belts and the men's long, unbound hair. Parsa, whose cropped, medallioned, rose-gold locks stayed neatly put, helped the three Tsong Zee men affect braids, then meekly allowed a technician to afix the EEG Array to her head. The others followed suit, while Rhys received reports from other quarters.

"The admiral is having a conniption," Danetta informed him over the comlink Yoshi carried. She had remained behind at the Medical Center to monitor their progress and keep an ear tuned to the military situation. "Joseph says if he complains about having his hands tied one more time, he's going to tape his mouth shut. I can understand how he feels, though. You're up there on that mountain, and I'm sitting here in a white room surrounded by a flock of murmuring, white-coated lab-dwellers. *Why* is life so complicated?"

Rhys felt a profound appreciation of Danetta's enduring wry-humor. It kept at bay the unease that wanted to settle in the pit of his stomach. "How's the situation with the Tsong Zee fleet?"

"A standoff. They've been moving around, evidently, but always to assume similarly non-threatening positions. They never get any closer." He heard another voice say something in the background and Danetta chuckled. "Astrid says it's like a snake charmer and cobra."

"Apt image. Has Sanchez attempted to communicate with the Tsong Zee directly?"

"Oh, yes. But you know how frustrating that is with those DT collars. You miss half of what they say and you offend them every time you open your mouth. I suggested he take your SubLearn course. I think he's actually considering it. How's Kuskov taking this?"

"He's been pretty empathetic with the Tsong Zee up to now. He's seen their art—experienced it—and he seems to take to them as individuals, notwithstanding there's a slight communication barrier. Some of his staff are a little ambivalent."

"They'd be more so if they weren't so isolated from what's going on down here. Between Beneton's 'associates' and the other agitators this place is hopping mad. There's even some sort of doomsday religious group in the courtyard that thinks the Tsong Zee are angels of darkness and that this is all some sort of spiritual test."

"Who's to say it isn't?" murmured Rhys.

"Yes, well. Fortunately, the Dark Angel contingent is balanced by an opposing group of theologians who are afraid the Tsong Zee are grossly misunderstood simply because they match some human picture of a devil. It's frustrating as hell, Rhys. No matter what Joseph and Sanchez do toward trying to alleviate the tension on the street, someone else—Beneton's cronies, we can only think—stirs it up again. There's been chatter of guerrilla groups forming. Colonials arrested several people who were trying to break into the spaceport.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Evidently, they thought they could commandeer a ship right out of its cradle."

Rhys nodded, forgetting she couldn't see him. "Is Beneton still under arrest?"

"Doubly so. Kuskov sent one of his curators down here to go over the archaeological evidence with Sanchez. He brought that spanking new sense-cube with him. Beneton got caught in a little white lie. He told Sanchez experts had determined the process was entirely different than the one used on the Velvet artifacts."

"Well, that's a relief of sorts."

"It's revenge of sorts, you mean. But Sanchez can't undo with his fleet what Beneton has done with words and credits. They don't make weapons that powerful. Besides which, we have no idea how many members of the governor's staff might have been compromised. For all we know Beneton could still be in contact with his organization.... Rhys, you'll be sitting ducks out on that mountainside." Danetta's voice was tight with apprehension.

A frisson of answering fear ran up Rhys's spine. "We may not have anything to worry about, Danetta. We outlined our plans to Sanchez in private. Joseph made the call to the Med Center on his office's secured line. I'm going to believe we're safe. Safe and secret."

"This is it?" Wood Carson smoothed the wrinkled piece of flimsy under his hands.

"That's it. That's the only thing that came down the chute from Harris's cell. Can you make it out?"

George Eising moved to peer over the VP's shoulder. *What a mishmosh—pyramids, lightning bolts...* He stabbed a finger at one drawing. "Isn't that one of the Tsong Zee?"

Carson grunted. "I wouldn't hail Harris as the next Jainschigg, but I think you're right." He tapped the flimsy with an index finger. "Clockwise," he said. "The images are arranged clockwise, and that... that's—"

"A guy in a dress."

"Llewellyn in that stupid kilt. Llewellyn... goes to the pyramids?"

"Mountains."

Carson nodded. "Llewellyn and the Tsong Zee are going to the mountains. What's this mosque?"

"That Shrine. It's got to be that Shrine they talked about on the holo."

The nodding gained speed and intensity. "They're going to look for that Shrine and we're supposed to stop them." He pointed to where a bolt of lightning intersected a path to the temple.

Eising frowned and tugged at his lip. "How? With lightning?"

"Think, George." Carson looked up at him on a slow smile. "Lightning, or something very much like it."

The road began in a cul-de-sac at the eastern edge of Kuskov's base camp. They stood now—Rhys and the Tsong Zee—at a point on the road from which they could see a tumble of water issuing from a connecting canyon to flow along the base of the steep scarp. They were joined by an archaeological team made up of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Kuskov, two of his fellow archaeologists and four of their best diggers. All apprentices had been left behind but two; Brasn's apprentice, Malin, would oversee this new form of Trade, and Yoshi, bearing the remote link to the Medical Center, would oversee Rhys and keep him informed of developments in other quarters. Rick and his Tsong Zee counterparts had stayed behind at the medical facility with Danetta Price.

With the diggers in a gravrover some yards behind them, the Keyholders and their ersatz Key-Master, who wore a tiny visual recorder along with his EEG Array, proceeded on foot. As the path swung southward and the stream made almost a ninety degree turn to parallel it, Rhys ordered the EEG Arrays activated. Yoshi breathlessly passed the message along and a second later, the Trade state was instituted along manmade channels for the second time that day.

As with the lab test, the effects were pronounced and immediate. This time, however, the Tsong Zee bursts were not warped by trepidation and surprise. And this time, the image in Rhys's mind must match one in the physical world. As he passed along the mountain road with the sensory input from four Tsong Zee minds wrapping him in their collective experience, Rhys felt as if he was suffering from concussion. The world around him seemed disjointed, discordant, frayed at its hazy edges. It was an unpleasant sensation, like trying to hold an important conversation in a noisy, over-crowded room, struggling to hear what that other pair of lips was saying amid a babble of invasive sound.

And his eyes! They tricked him into seeing everything twice or thrice, while anything he looked at directly jiggled and jumped and tried to escape notice.

Then, the jumble assumed a pattern—like a slightly out-of-whack hologram, struggling for focus. *Stereopticon slides*, Rhys thought. The kind he'd seen in museums. Two images, very slightly different—but with the right set of lenses. . . .

The picture clicked. The sound of the stream now came from where Javar's burst told him it should; the smell of reeds and blossoms, the accompanying taste of honey, weak, but present. He put out his right hand and felt the surface of a gigantic boulder that reared out of the mountainside, its surface dappled with afternoon sun. Ahead, the road sunk into shadow.

"All right!" Rhys allowed himself a sense of accomplishment and waited. Cool, cool shadow; the damp smell of waterplants, pungent; a breeze at his back. He hurried on up the road between the steep, hatchet-cut slopes, the Tsong Zee keeping pace. Yoshi and the archaeology team followed.

"There's the wind-whistle pattern again," said Dr. Platz, his finger tracing the audio phase map of Rhys's carrier wave bursts on his monitor. "And we've got a coupling with a taste of . . . sulphur, by the look of it. That's interesting." He glanced sideways at the display monitoring output from Rhys's vi-corder. Wisps of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

yellow steam dragged across the cobbled road. "These patterns are wonderfully concise, Ms. Price. But then a primer-like threat would tend to increase the gain—whoa! The sound pattern changed drastically, here. Rapid state shift. What's happening?"

All eyes flew to the visual display which showed a constantly panning view of the landscape. Rhys, too, was searching for the source of the sound. When the image finally fixed, it centered on a plume of sulphurous water that shot meters into the sky.

"Geyser!" cooed one of the technicians, and slapped his knee before returning to his monitoring of one of the Tsong Zee subjects.

Danetta grimaced wryly. They certainly did enjoy their work. She stood, stretched, and went to use the comlink in the next room. It was time to check in with Joseph.

Rhys chuckled at himself. Geyser. He'd somehow envisioned a whale and couldn't for the life of him imagine how a Terran marine mammal was going to appear in this sylvan setting. He turned slowly about, his senses reaching, groping for the next match of inner and outer sight. He raised his head, letting his gaze wander down the cobbled way. It curved again just ahead—a long, languid reptilian arc that dipped away out of sight amidst the band of coniferous trees decorating the neighboring slope.

They were on the southeast flank of the mountain the humans had named Carmel, overlooking a length of rocky slope to the south, pitted, Rhys could now see, with several geysers. That registered as nothing but a landmark—a key segment. But ahead . . . He started down the road again, across a shadowy gap toward the trees. At the bottom of the gap, something happened.

Pausing, frowning, he turned to look at Javar. "The melody changed."

"Yes."

"Do you know why?"

Javar closed his eyes and contemplated that briefly. "I'm not sure, unless . . ." He glanced around at the steep inclines to either side of them—at the road falling and rising. "We are between two mountains. Perhaps this melody is about the second Sister."

"Or the first," Rhys murmured. "We've no proof that Carmel is the first of the Three Sisters."

"No, but it does seem logical."

Rhys had to agree with that and quickly returned his attention to the trail. The cool of the mountain pass was beyond cool, the heat of its sunny flanks beyond warmth. He leaned into the upslope, listening to the new melody Javar's mind played to him. A peculiar, tonal wind-sough joined the solo instrument, making Rhys eager to reach the trees. He set his eyes on them, willing them to pull into focus. He was puzzled, though, because the scents didn't seem right. The trees produced a tangy, dry fragrance—he could smell it from the Key-Holder—but the perfume he was receiving from Keere was moist, cool, shady. He opened his mouth and took a tentative sip of air. Didn't taste right either.

His steps came slower and slower.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

now. This wasn't right. This wasn't the path. This—

He stopped in mid-trail, his attention arrested by a wedge-shaped canyon that ascended away from them to the northeast, slicing through earth and rock. Its floor was a mad jumble of fallen rock; its walls were topped by thick brush and twisted trees that grasped the meager soil with desperate roots as they leaned out over the precipice.

The wind whistled down the canyon, singing against the sheer walls. The sound echoed back, hollow, flutelike. Rhys took several steps to the edge of the road, then moved off it toward the tumble of rocky debris. The wind carried more than a song—it carried the moist, chill scent of wet rock and humid earth.

"This way!" Rhys called behind him, and began moving briskly up the defile. He had just reached the bottom of the cut and settled on a suitable track to take when he heard Yoshi shouting for him.

He turned to see her scrambling madly toward him, holding her comlink headset out in front of her.

"Sir! It's Ms. Price! She has a message from the Admiral!"

"I wasn't sure if it was significant, sir. That's why I was so long in coming. I was afraid I was being paranoid." Sergeant Greg Lederman stood at rest before Governor Bekwe's desk, unsure whether he should direct his comments there or to the huge ColSec admiral glowering several feet away.

"It sounds as if it might be very important," said Sanchez. "And better paranoid than sorry. He only threw away the one piece?"

"Yes, sir. All the others ended up on the floor. I just thought it was kind of odd he should be so neat with that one."

Joseph Bekwe stirred himself to ask the question he did not want to ask. "Who brought him the flimsy, Officer?"

"Um. Your secretary, sir—Ms. Cody." He shrugged and looked both apologetic and apprehensive. "I didn't think to question her, sir. I suppose I should have. I just assumed—"

Joseph shook his head feeling, if possible, more exhausted than he had the moment before. "Not your fault, Officer." He glanced at Sanchez. "I think the next thing we should do is search the trash bins."

Sanchez nodded. "Thoroughly."

"Officer Lederman, if you would be so good as to lead a security team in a search of the trash bins . . . ?"

"Yes, sir. Immediately, sir." He turned smartly and was gone, relief flowing palpably in his wake.

Joseph Bekwe rose and moved away from his desk, wishing momentarily that he could lock his responsibility for the colony in one of the drawers and walk away.

Sanchez followed him with his eyes. "How well do you know your secretary?"

"Very well, I'd thought. She's worked for me for five years. I thought she was trustworthy."

"Values, Governor. Priorities. She set hers, you set yours. . . . I think it's her ability to trust that failed. Would

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

you like me to question her? If it would be difficult for you—"

A bleat from the comlink interrupted. Sanchez, closer to the console, answered it, and a man in colonial security blues appeared, looking startled to see a ColSec Admiral instead of Governor Bekwe.

"Uh! Excuse me, sir!" He was clearly unsure whether he should salute. "Where is Governor Bekwe, sir?"

"Here, Officer." Joseph moved to where the colonial could see him. "What is it?"

"Sir, we've had a break-in at the armory. Someone's taken off with a roomful of ordnance."

Color drained from Joseph's face. "Any idea who it could have been?"

"None, but whoever they were knew what they were doing. They dealt with the alarms and the surveillance scanners at the system level."

"How—dealt with them?"

"They patched into the system and overrode the alarms, then froze the scanner in the corridor so it was projecting a static image. The officers at the monitor station never had a clue that anything was wrong."

Sanchez stepped back into the projection area. "What kind of weapons are we talking about, Officer?"

"Mostly small arms, sir. Although, they took a shoulder-mount laser cannon—anti-heavy-armor issue."

"In working condition?"

"Well, it was right off the factory floor, sir; we'd never used or tested it."

Sanchez scowled at nothing in particular and moved out of the projection area. Joseph gave the officer orders to continue his investigation, then turned to watch Sanchez pace.

"It's inconceivable that anyone could damage a ship with anti-armor laser fire." The admiral seemed to be speaking to himself. "And the Tsong Zee aren't likely to put any ships in range of another surface attack. I can only assume the target is something or someone else."

"The Tsong Zee ambassadors?"

"That would be my first hunch. Governor, will you put some of your colonials at my disposal?"

"Of course, Admiral. What do you have in mind?"

"I want to send some men quietly up the mountain to keep an eye on Llewellyn and company. This nutty professor of yours may have bitten off a good deal more than he can chew. Right now he and his Tsong Zee delegation are a bigger threat to BeneCon interests than the OROM fleet. And they'd be a much easier target." He turned to Bekwe. "I want to view the security record from Beneton's cell. Maybe we can see something Sergeant Lederman missed."

Joseph nodded and reached for his comlink. "Done."

"And we'll need to contact Llewellyn—let him know we're going to put a tail on him. I don't think it would be wise for me to try to contact him from here, or to contact Ms. Price either.... We'll go to the Med Center ourselves," he decided. "Work from there. Dump that security record on a wafer and we'll look at it enroute."

Joseph nodded. "I can't help but wonder how long a jump Beneton's

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

people have on us."

"Pray it's not long enough. If it is, and something happens to that Tsong Zee delegation, we may have a war on our hands."

"Are you *sure* Beneton's sent people after us?" Rhys was half concentrating on the long, steep, broken slope before him, wondering when the next key sequence would begin to take hold of his imagination. The tension orbiting Velvet and festering in Haifa was abstracted almost to the surreal.

"Professor," said the Admiral, "I'm not 100 percent sure of anything. We know the governor's secretary passed information about your excursion to Harris Beneton. She claims that was the extent of her commitment to BeneCon—to get information out of the governor's office to Beneton personally. She claims she had no idea what he was doing with it. She claims not to know who else is involved. Beneton evidently contacted his cronies himself."

"From an E-cell?"

"Scanner record shows he spent a great deal of time doodling on flimsies the secretary brought him—making a nice little mess for maintenance to clean up. Except that he tossed one of them down a refuse chute and when security checked, there was nothing in the bin."

"What was on it—any idea?"

"The officer on duty at the time remembers pyramids, a woman's face and a lightning bolt. Oh, and a stick figure of some sort. Nothing that made any sense to him at the time. It makes sense to me, though. Beneton was leaking your whereabouts to someone on the outside in such a way that a casual observer wouldn't remark on."

"You've no idea whom?"

"We can guess. His business associates have completely disappeared. Their offices are empty. Shut down and everyone sent home. His flat is vacant. Then there's the other bad news. A colonial armory is now missing a number of hand weapons and a shoulder-mount laser. I'm convinced Beneton is gunning for the Tsong Zee."

Rhys swore. "If they intercept us—"

"We'll try to keep that from happening. Right now, you're up a tree. If you try to come back, you may fall into an ambush. My best advice is to keep going. As quickly as possible."

"But cautiously, eh, Admiral?"

"To hell with caution. Keep moving."

He signed off then, and Rhys buried himself in the canyon path, trying to ignore the impulse to glance over his shoulder every five seconds.

Tomin B-nath Yan could have kicked himself. As it was, he muttered self-deprecating epithets and wondered how he might retrieve the situation. If only he had been more attentive during their last maneuver if only he had been able to imagine how threatening that maneuver looked to the human adversary, if only—

Yes, yes, he thought sharply, *if only wishes were time engines, I might go back and undo my error.* But he could

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

not undo it. He had moved his "battle flock" too close, too fast, and now they were face to face with the human host.

Tomin B-nath Yan watched the facing wing of human war vessels with trepidation. They were much smaller than his ship, the *Shadayan,* but so much more deadly and so much more abundant. Of course, their human masters didn't know that. From where they hung, thousands of kilometers away, the Tsong Zee "fleet" looked immense. He tucked a strand of long, pale yellow hair into the corner of his mouth and chewed it ruminatively. What would those fellows think if they knew they were facing four glorified freighters? Freighters armed with nothing more dangerous than a singularly powerful tractor/repulsor beam?

He took a glance at the time-keeper above the helm. It was time for his "battle flock" to make its appointed move to a new quadrant. The human vessels had not attacked. Perhaps he could retrieve the situation. He turned and gave the order to the helmswoman. "Modify our course to take us over the *Shadamela* and into a synchronous orbit over . . ." His eyes flicked to the relief map of Tson. "Over the Kafsour Sea. Carefully, Munira."

"Done, sir," she responded, her hands already moving on the controls.

He would be glad, he thought, when this was over. One way or another. It so complicated things to come home, only to find someone else already living there. He studied the vari-colored ball rotating slowly in the port display and thought how beautiful it was. Beautiful. But was it worth this?

He had no real memories of Tson. No one did. But every Tsong Zee man, woman, and child had memories provided for them by the Tsadrat—the great Speaker of the Gondayan. And for some Tsong Zee, those memories seemed to have a life of their own. They guided every act, every thought, every desire. He had thought he was one of those so possessed—possessed by memories of a world he had never seen. He knew his Speaker, Brasn, was such a one. Now, as his vessel navigated the ship-spangled firmament above Tson, he was not so sure about his own possession.

"Commander!" Munira's voice was sharp with agitation. "Commander, alien ships are moving to intercept us! Shall I take evasive action?"

Tomin B-nath's eyes gripped the main external display, struggling to comprehend what he was seeing. Munira was correct, certainly. A number of the human war vessels were bearing down on them, grouped in a precise circle. He hesitated. He was not a warrior. There hadn't been warriors among the Tsong Zee for centuries. He was the captain of an ark, a refugee ship, not a battle wagon. Yet, that was the aliens' perception of him.

"Zafa! Warn them off. Eject a convex spread of webbing at them —damping configuration. On my mark."

The young web-tech straightened in his seat, his fingers hovering over

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the pair of globes that controlled the power, properties, and contours of the tractor webbing.

"Commander," whispered Munira, "the hologram."

He had nearly forgotten. If the *Shadayan* fired, every ship in her faery fleet would fire with her, and the aliens would know the depth of their falsehood. He spoke over his shoulder to the hologram technician. "Tsad, freeze the hologram. Project static image."

"Done, sir."

Tomin B-nath brought his eyes back to the external display. The human warships continued toward them. The *Shadamela* was beneath now, and a bit astern. He wondered if he should suggest that she flee. "Deploy web," he said.

"Web deployed."

It sailed away from them like a glorious cup of light, spreading as it neared the human ships. They fired at it. A completely futile thing to do, since the web's fibers absorbed whatever energy was thrown at it. Their weapons were interesting—sabres of light that slashed at the gleaming fabric but failed to cut its threads. A beautiful display.

The web touched the dozen or so ships, then, and brushed through them like the little wisps of sheer lace woven by Kamorg's tiny wind-riders. Their running lights dimmed, flickered, then winked out altogether, and Tomin B-nath grew tense, hoping the power loss would have no adverse affects on their life support systems.

"Time to power restoration?" he asked Tsad.

"Five chimes ... four ... three ... two ... one ... zero."

The lights flickered back on. Tomin heaved a sigh of relief. Munira shrieked. A saber of intense light cut across the *Shadayan*'s bows, all but blinding her bridge crew.

"Dive!" yelled Tomin B-nath. "Twenty beams negative!"

The ship dropped like a stone, falling away from the alien fire. Again, Tomin knew relief, they had missed *Shadamela* by less than thirteen beams.

"Jesus H. Christ!" Commander Fremont's stomach plummeted with the alien ships. It took only a heartbeat for him to realize that several of them would collide with ships from the wing below, only a breath to register that they *had* collided, only a blink to notice that they had collided without disintegrating.

He gaped, as his entire bridge crew gaped. At least five of those ships had dropped right through their fellows without so much as a piece missing. And that, as any armchair physicist would tell you, was impossible.

—7—

The sheer rock wall climbed straight up out of a jumble of boulders, brush, and mountain ferns. Rhys Llewellyn stood below and blinked at it, barely aware of the buzz of voices behind and below him. All the sensations had been right, every single one. And yet, here they were, winded, aching, stitch-ribbed staring at an unbroken face of solid stone.

In a moment, Rhys told himself, he

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

would get his wind back and climb the last seven or eight feet. To what purpose, he wasn't quite sure. He felt movement at his shoulder and knew it was Javar who stood there. The recognition brought with it a strange, savory sense of kinship, as if he and the Tsong Zee were cut from the same internal mold, as if their common bond had nothing to do with modern gadgetry.

"A rock slide, perhaps?" suggested Javar.

Rhys shook his head. "That'd be some slide. But of course, it had to have been. Ah, I guess even an avatar can't foresee everything."

Javar glanced from Rhys to the wall and back, his lips twisted thoughtfully. "I am not so sure of that. There is a poem attributed to the Tsadrat which says, in part, 'And if I have dropped my offering bowl and it has broken, I shall mend it. Ah, but how shall it be mended with a missing shard? Who shall find the piece and set it, and of what substance shall the glue be made?' "

Rhys's heart insinuated itself into his throat, fluttering tightly there —butterfly on string. "Do you think . . . do you think he meant the Tsong Zee would be missing a piece of their puzzle—that he foresaw the loss of the Walkers and this?" He gestured at the motley group scattered among the rocks.

"I am continually surprised by circumstance," Javar replied.

Rhys turned his gaze back to the rock face. *All right, let's suppose the Avatar—the Tsadrat—did foresee the rockfall. If it was a rockfall.* His eyes moved up and over the sheer rock. It was curving, concave, and smooth—almost too smooth to be natural. He raked his eyes across the boulders strewn just above them, at the branches and fronds of greenery bobbing in the breeze.

He locked eyes on one tall fern at the same time Javar did. Their active link recorded and broadcast both bursts, creating a bizarre reinforcement in Rhys's mind—a slap-back echo of sensation. They began to scramble toward the fern in unison, reached it in breathless harmony.

Cool, dank air hit them full in the face. Rhys grinned at Javar, who emitted a tuneful whistle through his slit lip and afforded the boulder he leaned against a resounding slap. They turned back downslope.

"There's a cave!" Rhys shouted. "A cave! Come on up!"

Yoshi and Brasn's apprentice, Malin, was already moving, but Rhys could tell by the expressions of face and body that his announcement was not what they were responding to.

Now what? he thought, and waited impatiently for them to reach the cliff.

"Holograms! We've been held at bay by a damned picture show!"

"What?" Joseph Bekwe sagged against a wall, his face flaccid with bemusement.

Sanchez gritted his teeth audibly. "At least a portion of the OROM fleet is a sham. They collided with each other—without effect. No damage. One of my more enterprising commanders then proceeded to fire

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

across the bows of the ship leading the formation and, lo and behold, when their force fields went up, one whole wing winked right out of existence. Holograms, Governor."

Bekwe sat heavily in a hospital lounge chair. Holograms. He wondered how many ships there really were. Just the ones that had fired on Haifa? Or were those also mere shades? "How many—?"

"Four. Four ships. And evidently, the closest thing they have to weaponry is a tractor web." He shook his head. "That's a new twist on the Emperor's clothes: The invaders have no fleet."

"What are you going to do now?" Bekwe asked.

"I'm going to order down some troops—try to restore order. Then I'm going to grab a floater and pay a personal visit to the White Shrine."

"What have you instructed them to do?" Rhys asked Brasn as he secured a small light-emitting disk to the front of his sporran. They stood in what amounted to an ante-room to a much larger cavern, preparing to take their search into the darkness beyond. The archaeologists were gathered in an out-of-the-way corner—discussing what to dig up first, Rhys supposed—while Yoshi murmured to Danetta in hushed tones and Malin communicated instructions to the Tsong Zee vessels.

"Whatever is necessary to preserve life. There are two hundred people up there in those ships. I will not take chances with those lives. So many of them are young—volunteers who came because they were eager to see their homeworld. It was a dangerous and clumsy ploy, having them pretend to a size and ferocity they did not have. Armed conflict is not something we readily understand. And this was not," he added, "the way I envisioned our homecoming."

"You've no warrior class? No . . . armed forces?"

"None. Well, there are the Arbitrators. They are sometimes armed with small pellet weapons which inject a mild paralytic, or with a scaled-down version of the web. That is used as a personal force field. There are some dangerous animals on Kamorg."

"And dangerous people?"

Brasn tilted his head. "A few. But they are not organized into fleets."

"Then how did you arrive at that concept?"

"History. We do understand the concept of an armada. Our seas were once populated by vessels of war. It was an easy enough jump to a fleet of space vessels. We had four operating already, plus four in reserve, and we knew how to . . . multiply their apparent strength. But, as for tactics . . ." He gave his shoulders an artless twitch.

"Sir?"

Rhys turned to find Yoshi at his shoulder. "What is it, dear?"

"Before you get started on the next sequence, I just thought you should know that a couple of the diggers are getting scared. They're starting to say things I don't like." Her expressive face stated unequivocally that she would like to rivet a few sets of lips together. "They're trying to convince Kuskov that the odds of them taking

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the Tsong Zee hostage are pretty good." She glanced over her shoulder and shifted from one foot to the other. "And there's something else, sir. I . . . I think maybe we're being followed."

Rhys lifted his head and glanced back toward the cave entrance. "What makes you say that?"

"Rockfall. Behind us in the canyon. And I thought I saw something moving way back down the trail. I suppose it could have been an animal, sir, but . . . well, watch your back, sir." Her brow puckered ferociously, she adjusted her headset and her light-disk, and rejoined Malin.

Followed. Rhys found himself hoping Sanchez's men had caught up with them. He turned to the Tsong Zee Speakers.

"We heard," Javar informed him. "But since we cannot 'watch our backs' and Trade simultaneously, we shall have to hope that Malin and Yoshi can watch them for us."

The cavern provided its own unique blanket of sensory input. Along with the characteristic musk of cave earth, the arrhythmic music of water trickle-drip underscored by hollow wind-sough, it yielded a chill that seemed to cling to the skin with conscious tenacity. The stripe of sweat down Rhys's back felt like an icy saddle blanket.

But that was not a by-product of the Tsong Zee physiology, nor did it figure in their key sequences. Before Rhys had taken two steps toward the far end of the cavern's first chamber, those bursts had overwhelmed his physical discomfort, crowding out sensations of clinging fabric and cold knees. His fingertips tingled, telling him he was looking for something smooth, cold, wet and solid. Something so sleek it certainly must gleam like Tsong Zee flesh. Something like . . . that stalagmite.

He moved quickly to it—a sentinel near a cramped-looking doorway to darkness—set his palms to it and felt the image click into place like the puzzle piece it was. He peered into the portal. Sightlessness; close, pressing walls; slick, moist stone—the ghost sensations flew at him out of the black opening.

"This way," he said and, not even glancing back over his shoulder, bent and pushed into the narrow way. It was a low-ceilinged corridor, its walls wearing an eternal sheer curtain of water which oozed downward leaving greenish streaks. It was somehow longer than he'd expected, boring for over fifteen meters through the rock. He touched the walls. Smooth as glass. Might it have been literally bored by Tsong Zee hands and machines?

Half crouched, the explorers continued on through the tunnel, the sense of anticipation borne back and forth between those joined in the machine-assisted Trade—bursts of it swept along on the same waves that carried the keys.

Rhys halted suddenly at a low point in the tunnel. "Javar, your melody changed again. Is that significant?"

"I can only imagine we must have passed from the Second Sister and are now within the Third. Does this make sense?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

"Yes. Does it also make sense to hope we're near the end of this trail?" He looked at Javar over his shoulder.

The Tsong Zee's eyes were huge blue mirrors, reflecting back the light from Rhys's disk. "It does make sense to hope. I, too, feel as if we are close to unlocking the door to our past."

Rhys only vaguely heard the murmur of human voices that rippled along the corridor behind them. He turned his face toward the goal and continued onward, the new variation on the Three Sisters theme playing continually in his head.

Ahead now, the light-disks failed to illumine the way before them, as if they approached a black, light-sucking archway. It took Rhys a moment to realize what that meant. There was a chamber ahead. He increased his pace, aware only that Javar's melody had taken on yet another permutation, that Keere's cave-musk was now warring with a sweet, spicy fragrance, that Brasn made his face tingle with anticipated warmth, that Parsa tasted a spiced beverage.

Heart pounding, he stepped out of the tunnel and came upright, gaze reaching into the large chamber, borne on the tide of light from a dozen disks and hand torches. An uncontrollable sigh escaped his lips. This was it; this was the White Shrine. Its far end was dominated by a large apparently natural platform upon which sat a group of five seats. They might have been alabaster thrones, but they were not the least bit thronelike. Austere in their simplicity, each bore a symbol which Rhys assumed must correlate to the Tribal Speaker expected to sit in it. To the right and left of the platform were what first appeared to be giant chalices carved from the pale cave rock, but which Rhys quickly recognized as braziers. And along the walls of the Shrine—

"The history of our race, preserved for us against time," whispered Parsa and moved past Rhys into the chamber.

The sense-tiles decorated a significant portion of the free wall space at roughly shoulder height and, within row upon row of carved-out niches in those walls, were globes and cubes and stacks of tiles—the archives of the Tsong Zee. And there was no doubt, Rhys thought as the Tsong Zee all brushed by him to view their heritage, that they were the rightful heirs, for there was also a mural for those merely sighted. It scrolled across the back of the dais in a colorful tableau peopled by individuals who were doubtlessly the ancestors of those whose encoded sense memories had led the way here.

"Sir, I don't like this." Yoshi's voice was the merest whisper, lost, almost in the articulations of Tsong Zee and Human alike as they surveyed the room. "Three of the diggers have gone back into the corridor. I think they're plotting something. I can *feel* it."

"Ah, but what can they do?" Rhys asked absently, his eyes on Kuskov, who was making it his personal business to record the find on holoscan.

"*Sir!* One of them is the demolitions expert. They have explosives!"

He gaped at her blankly for a mo-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ment. Of course, they had explosives. They were prepared to dig, to remove impediments—

Rhys launched himself back toward the tunnel, not even thinking of what he might hope to accomplish alone if the men were dangerously inclined. Of course, he was not alone, Yoshi was right beside him. He almost paused to tell her to stay, but one glance at her face was enough to save him the futility of that exercise.

They hadn't gone very far down the tunnel; he found them a few meters along it, huddled over the work of the demolitions expert, Quozel. They blinked guiltily in the white light of their collective torches, but offered no apology for the small, but potentially dangerous device at the center of their scrutiny.

"What are you doing?" Rhys asked, as if it wasn't perfectly obvious.

"You know what we're doing, Dr. Llewellyn," said one of the men. He stood, straightening as much as he could, his back pressed into the wet curve of the wall. "You know what we have to do. This Shrine has to be destroyed."

Rhys felt sweat bead on his upper lip, tasted fear, acrid, on the back of his tongue. His kilt itched abominably. "And will you destroy the Tsong Zee with it? Destroy us? Destroy your own colleagues? Dr. Kuskov?"

"We'll convince them to support our story—that there was no White Shrine, that it was just a hoax. Then it'll be our word against theirs." He jerked his head toward the Shrine.

"And mine. And Yoshi's. And you

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

can't be sure that all of your colleagues are going to see this the same way. You ought to see them in there. They've discovered something profoundly important. Something they'll not be easily convinced to destroy, I think. As for me, I've no inclination to let you cast me as the Wolf of Badenoch. I'll torch no cathedrals, gentlemen."

The digger's glistening face flushed and he snapped at Quozel, who had stopped his work to listen. "Get that finished!"

The tech didn't move. The device cradled in his hands, he glanced from his fellow to Rhys to Yoshi. "He's right, Troy. We can't count on support from the whole team. You know that. They didn't want anything to do with this. What makes you think they'll keep their mouths shut? And Dr. Llewellyn—"

"Then maybe we have to force their mouths shut."

Quozel waved his little bomb in the air. "You mean *kill* them? Holy Moses, Troy—you're crazy! I'll blow up the whole damn mountain, but not if they're still in it."

Troy dropped to his knees beside the technician. "Would you rather lose this planet to them?" His head jerked toward the cavern. "Would you rather have to pack up your life, your family, everything you've worked for for the last—what—ten years? Have you thought about where you'd go? What you'd do?"

"Have you thought about where you'd go or do with a dozen murders on your conscience? Good Lord,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Troy, *think* of it!"

Indecision. It was there for a split second in Troy's face, then buried in a slide of anger. No, not strictly anger, Rhys realized—there was an unhealthy amount of fear.

"There's no guarantee you'll have to leave Velvet," he said quickly. "The negotiations aren't finished yet. Not by a long shot. But if we earn their distrust, it will all be over."

"It's all over, anyway, if we negotiate. We could end up a slave race, our businesses, our *lives* owned by the Orcas."

Orcas? A frisson of recognition scurried by Rhys's back. "Is that what Beneton told you, Troy? That the Tsong Zee mean to enslave us? Are you doing this as a favor to him, or did he pay you something as well?"

The digger's face blanched, sweating like the pale stone walls. "How did you—? It's not the money. I'm just protecting what's mine. What's *ours*." He jerked his head at his companions.

"But there is money, isn't there, Troy? Destroy the Tsong Zee's chance of ever proving they lived on Velvet and what? What did Beneton's people offer you?"

Troy would have had to have been senseless not to feel the eyes of his cohorts burring into his skin.

"Yeah," murmured Quozel. "Yeah, Troy, what are you going to get out of this?"

Troy's eyes flicked to Quozel's face, then back to Rhys. "A life, that's what they offered me. A life. Which is more than I'd have if we let *them* lord it over us. I don't want to leave here and I don't want to live like a serf or a sharecropper. This is the only way out." He pointed at Quozel's little bomb.

Rhys unclenched his jaw. "So you're willing to start a war? What kind of a life are you going to have in the middle of a war, Troy?"

The digger blinked.

"Ah! Hadn't thought of that, had you? What did Beneton tell you—that the nasty aliens would just slink off without a fight? Tell me, Troy, have you ever been in a war?"

"No. Of course not."

"It's not pleasant. People die. Lots of people. People you know. People you love. You know what this planet was like after what they did to it. It was virtually dead."

Troy snorted. "One more reason not to hand it back to them."

"They're a different people, now. They've learned their lesson about war. What have we learned?" He felt his temper fraying. "Come on, man! Didn't you learn anything from their example? Didn't you shake your head over what they'd done to this world?"

The digger stepped toward him, meeting him nose to nose. "I have lived here since I was five years old. I fell in love with this place the moment I floated down the chute and set my feet on that black soil. My wife was *born* here—one of the first. This place has been my career, my life. All my memories are here. All *her* memories. We can't throw that on a ship and transport it to another world. Can you understand that Dr. Llewellyn?"

Rhys felt a wave of empathy engulf him. Pa-Loana had been the closest thing to a homeworld he had known

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

since he'd left his academic post on Newscot to work for Tanaka Corp. The Pa-Kai had become his kinfolk, the anchor to his wanderings. He hadn't lived somewhere since he was five years old, but he knew the feeling. "Yes," he said. "Yes, I can understand."

"The way I see it there are a handful of choices. Either the Tsong Zee go and we stay, the Tsong Zee stay and we go, or we share the land. Do you think the Tsong Zee will go?"

"Not if they can help it."

"Can you guarantee they'll let us stay here with them—free, independent? Can you guarantee this won't erupt into a war if we refuse to leave?"

"I can't guarantee they'll let us stay. But I *can* guarantee that if we *do* stay, we'll be free. They're not in the business of overlordship. As to war, well, that seems to be in your hands, at the moment."

"No guarantees—no discussion. We have nothing to talk about, Doctor." Troy turned back to his group of co-conspirators and plucked the explosive from Quozel's hands. "Is this ready?"

"It-it doesn't have a timed detonator. Look, Troy, this is—"

"What does it have? Will it explode on impact?"

The tech's eyes widened and his mouth dropped open. "Uh, yeah, but—"

Troy moved with amazing speed, considering the tight quarters they hunkered in. He lunged at Rhys, nearly throwing him off balance and scaring a dainty shriek out of Yoshi.

Rhys, never one for physical skirmishes, desperately tried to block his path, throwing a counter-lunge into his rib cage and praying he wouldn't drop the explosive. It was a small thing—just a little ball of innocent-looking plastic—but Rhys had no doubt whatsoever that it could bring the cavern roof down or, barring that, blow the group in the tunnel to kingdom come.

His shoulder pressed into the digger's gut, he begged superior traction from his brogues. "Don't make yourself a hired assassin!" he grunted, digging in. "Talk to the Tsong Zee! Know them!"

"Get out of my way! I have to do this. I have to! I won't leave, dammit! I *won't* leave! I'll get that Shrine if *I* have to go up with it!"

Rhys flailed with his left arm, his questing hand at last laying hold of Troy's wrist. He gripped tightly—but not enough, he hoped, to make the hand drop its lethal burden. He heard the group behind Troy gasp. Someone scurried away down the corridor toward the cave entrance.

"Will you die, then?" Rhys asked, his voice muffled, strained. "Is Beneton worth dying for? I notice he's not here. He's not prepared to die. Why should you die for him?"

"Not Beneton—Velvet! Velvet's worth dying for!"

Rhys twisted his upper torso, raising his head. He could just look Troy in the eye. "Will your wife think so, Troy? Will she? Which would she rather have—exile with you or a home without you?"

He had gotten through—he could

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

feel it in the sudden, trembling stillness of the other man's body. He pursued the point. "You're a young man, Troy. Your wife—she must be about Yoshi's age, eh? You throw that bomb, you'll be giving her an awfully long life without you . . . or *with* someone else."

He hazarded a glance back over his shoulder. Yoshi was still here, her pretty face almost devoid of color, her eyes riveted on the explosive. Behind her he could make out the gleam of light on jet-black skin, the glitter of pastel eyes, bright ripples of cloth. He wondered how long the Tsong Zee had been there.

Troy let out a grunt of humorless laughter. "Looks like I'm dead, anyway. They'll kill me the moment they get the chance."

"What do you say, Brasn?" asked Rhys in Tsuru. "Troy wants to destroy your Shrine because he doesn't want to leave Tson. He thinks you're here to kill him."

"No," said Brasn quietly, shaking his head several times for emphasis. "We are here because we sensed your physical distress. We have no wish to kill Digger Troy. Yet, neither have we any wish to lose what we have waited so long to find. We have what I believe you call a 'dilemma.' "

At that one word, uttered in perfectly coherent English, Troy's body stiffened, beginning to quiver anew. "What'd he say? What'd he say?"

Rhys repeated Brasn's words in English. The quivering increased.

"Well, there it is, Troy. They don't want to have to stop you and I'm not sure I can. That leaves Yoshi. She's not much of a warrior either, I'm afraid." He glanced at Troy's sweat-coated face then back at the girl standing behind him, her eyes on the explosive. "Look at her, Troy. She's eighteen. That's a marvelous thing, to be eighteen. You remember—the beginning of everything. The end of waiting for adulthood. That's a powerfully great thing to put to an end. Do you want to do that to Yoshi? Do you want to bury that girl under a ton of rock? Will you be a hero if you do that, d'you think? Or will you be something else?"

Muscles relented, softened in Rhys's grip. He kept his eyes on the other man's, gradually loosing his hold on the sweat-soaked wrist. He felt the little plastic sphere pressed gently into his palm.

"Oh, Lord," mumbled the digger. "Oh, Lord, I'm ruined."

Rhys took a deep breath. "No, I think we can all agree there were extenuating circumstances. Can't we?" His glance brushed the others—Quozel, Yoshi, the Tsong Zee, now fully visible directly behind her. He got consenting gestures from all.

He handed the bomb past Troy to the technician. "Disarm that, please."

"Yes, sir!" He fairly leapt at it.

Rhys wanted no more than to dissolve into a plaid puddle, but couldn't afford to, yet. One of the diggers was missing; the lone escapee. He shook Troy's shoulder lightly. "One of your men took off. Is he on Beneton's payroll too?"

Troy glanced guiltily at the group of tense faces and nodded.

"Speaker Rhys," said Javar from be-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

hind him, "there is nothing we can do now about that man. Whether he has found escape or ambush or ally, we are powerless. But there is still the Shrine. Won't you come and see all that we have found?"

Rhys nodded. "I'd like that." He studied Troy's face. "Will you be all right?"

Quozel stood and moved to his friend's shoulder. In the light of torch and light-disk, his face shone with a fine dew of sweat. "He'll be fine," he said and put a steadying hand on the other man's arm. "I'll keep an eye on him."

They made their way back to the Shrine, emerging from the tunnel into what now, with braziers lit, looked like a cave of pale, shifting liquid. The Tsong Zee turned as one to face Rhys and Yoshi.

"Fear tastes the same on all tongues," Javar told him. "Through you, we knew Digger Troy's fear—smelled it, saw it, heard it through your ears, tasted it in your mouth. We had not believed a human capable of such attachment to Tson."

"Nor had we anticipated," added Brasn, "that a human would be willing to fight for *our* interests. Why have you done this? That man would not have harmed you had you agreed to let him destroy our Shrine as he wished. And humans would have benefited from its destruction."

"Would they?" Rhys shook his head. "No, Brasn. I don't believe that for a moment. It would be to our detriment, ultimately, to treat another race so shoddily. This place is sacred. It may not be a Shrine of *my* ancestors, but that doesn't make it any less a sacred place." He let his eyes wander over the curving vault of the ceiling, the muraled walls with their treasure trove of ancient Tsong Zee knowledge. "My blood did not rise from the streams of this world, Brasn, but we are both men. We can connect. We can empathize. Your rights as a man are no less important than are mine. Your love for your homeworld is no less strong. I could not call myself human if I was not willing to fight for those rights—not willing for you to receive justice. The same justice I desire for my own people."

"Justice," repeated Brasn, nodding. "A very important concept to Tsong Zee. I perceive, now, that it is also important to humans." The Gondayan Speaker raised his golden eyes to the stone dais with its row of five seats. "Let us complete this pilgrimage. Let us take our places in the seats of our ancestors."

"But one seat will be empty," objected Parsa. "Among the Traditions of the Tsadrat it is related that the Five Tribes of Tson must sit down together within the White Shrine. Surely, the Walker's seat must not be left unfilled." Her eyes were on Rhys.

Keere moved restively. "He is not Tsong Zee."

"He is a man," said Brasn.

"His people are Walkers," said Javar. "They walk the heavens in ships."

"He is the Key-Master," said Parsa, in a tone that told all she considered the matter settled. "The Key-Master must sit with the Key-Holders."

"It *is* recorded," added Brasn. He looked to Keere.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Keere's mouth puckered oddly. He sighed, canted, and then nodded. "It is recorded." He met Rhys's eyes and pointed toward the dais. "That is your seat, Key-Master Rhys."

His heart rabbiting in his chest, Rhys responded with a courtly bow. "I am honored."

"So we perceive," said Brasn and led the way up to the dais. Once there, he gestured each Speaker to a seat.

Rhys, following the Gondayan's cue, stood before the stone chair to the left of his own central one. Facing out into the cavern, he noted that Kuskov was recording the ritual. That was appropriate, he thought. Let history record that the Tsong Zee reclaimed their world—that they deserved to reclaim it.

Glancing to his right, he saw Brasn inspecting the broad arm of his chair. In a moment, the Tsong Zee Speaker had removed the top of the arm and produced from the hollow interior, a sense-globe of shimmering purples and blues. He replaced the top of the arm, turned and sat, the globe cradled reverently in his hands.

Rhys and the other Speakers followed his lead, seating themselves in the stone chairs. The action was greeted by a nearly blinding burst of light as the ancient chamber came to sudden life. A chorus of startled gasps melted to awestruck murmurs as the lights, concealed behind stalactites and stone screens, struck minute chips of diamante glitter from every tiny crystal in the chamber. It was as if the entire place had been swathed in a robe of sudden, brilliant snow.

Oz, thought Rhys, *it wasn't an emerald city after all.*

"It appears," murmured Javar, "that we have been expected."

"Did you ever doubt it?" Brasn held up the sense-globe and began exploring it with reverent fingers. After a moment of study, he began to chant aloud, his warm, flute-voice weaving his words into an exotic melody. "Tribes of Tson, welcome here, for you have come home. You have overcome loss. You have weathered exile. You have transcended prejudice. You have achieved unity. You have reclaimed your birthright. Five Tribes are united here: Gondayan—Seers of the Soul; Gondavar—Searchers of the Earth and Sky; Gondamela—Traders of Goods; Gondarau—Tillers of the Soil; Gondatrura—Walkers of the Heavens . . . !" He paused for a moment, hands moving rapidly over the face of the artifact, then concluded, "Be united here. Tson is yours to share. . . . It is recorded." He lowered the globe.

"Walkers of the *Heavens?*" repeated Keere, and Javar leaned forward in his seat.

"It says that?" he asked.

Brasn held out the globe to him. He took it, searching it with eyes and fingertips. "Indeed," he mused, "it says exactly that. The ships are clear to see."

"Perhaps," offered Keere, "it is our own ships that are recorded. It could be said that the moment the Gondatrura left the face of Tson they became Walkers of the Heavens."

"It could be said," agreed Brasn, then twitched his shoulders in the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Tsong Zee version of a shrug. "We will probably never know. But we are here. And the Shrine has accepted our presence. We have been told what we must do, have we not?" His eyes swept the faces of the other Tsong Zee, drawing from each of them a cant of agreement. He turned to Rhys then. "Speaker Rhys, Key-Master of the Gondatrura, we perceive that your Tribe also has a claim upon Tson. Will you be content to share this world with these others?"

Rhys was sure his smile would split his face apart. He wondered fleetingly what the Tsong Zee made of it. "I can't speak for everyone, but I'm sure most would be willing to try."

Rhys glanced up at the low ceiling of the passage and patted his chest, savoring the comforting lump of Pa-Lili's fetish bag. It carried Kuskov's visual record of the Shrine—a coin-sized disk of faux-ceramic—tucked reverently in atop the precious lock of Pa-Lili's hair that had been the Pa-Kai Shaman's gift to him upon his leaving. "For memories," she had said.

He would have rich memories of this place, he mused as he picked his way down the corridor behind Javar. Memories he hoped to be able to share with her.

Javar dropped back, peering at him through half-lidded eyes. "Your loved one is not of the same race as yourself," he noted baldly. "Pardon if my observation is discourteous, but your impressions of her are extraordinary."

Rhys overcame a moment of confusion, then realized the EEG Array was still functioning. "My loved one... yes. She is rather extraordinary. And no, I don't find your observation discourteous."

"What manner of relationship can you have? Surely, it is not possible to procreate?"

Rhys laughed. He had often thought of Pa-Lili as soul-mate, if not as mate. They were alike enough in mind and spirit—merely too dissimilar in body. "No, Javar, we cannot procreate. Nor can we bond sexually. Nor do we even wish to."

"What then?" asked the Gondavar Speaker.

Rhys became suddenly aware of the mental scrutiny of the other Tsong Zee. Boldly, perhaps, he reached out and took Javar's four-fingered hand. "Friendship," he said. "We are friends. We are... kindred spirits." He thought again of Pa-Lili's beloved, camelid features, forging past them to the things that made her at once unique and akin, and felt answering, if elusive, impressions from the Tsong Zee. Javar returned the pressure of his hand and nodded.

A heartbeat later an explosion rocked the cavern, throwing them both to the gritty floor and spewing a maelstrom of dust and debris at them from somewhere ahead. Someone, human or Tsong Zee—Rhys couldn't tell which—shrieked; the sound was drowned in the low rumble of rockfall from the outer chamber.

Rhys clung to the cave floor, praying the sound would stop, hoping it would not be followed by a second explosion. Beneath him, the cavern

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

shivered, wriggled like an over-adored kitten, and his mind raced. Had to be Beneton—no, Beneton's men. Could anybody really do this? Could anybody really bring down a mountain on an innocent group of people? They had paid Troy to do it and he had wanted to—had thought he wanted to. But Troy had been face to face with the people he would have killed. They were anonymous now—buried, already, out of sight. It seemed these people could kill anonymously.

Ahead of them, the rumble died to a sigh of cascading dust, sounding like rain. Rhys got to his knees, gritting against the bite of pebbles pressed into bare skin. *Kilts*, he thought irrelevantly, *are not the most practical of spelunking gear.*

He tried to call out, sucked dust into his lungs and wheezed, then remembered the EEG Array. Fingers of sense groped the dusky passage, probing where blurred eyes could not. He found Javar, very close to him, Keere and Brasn rising from the floor behind them, Parsa and Malin ahead of them, closer to the point of explosion. Parsa was groggy and in a little pain. He remembered that Yoshi had been with her and knew a moment of cold, stark panic before Malin let him know that she was all right.

He heard her a moment later, trying to cough and call to him simultaneously. Then the passage was full of sound—the scrape and scramble of people pulling themselves upright, coughing, exclamations of concern and fear, questions. The dust fall was clearing, and light disks turned the dusk to smoky twilight. Rising, Rhys peered forward, saw Parsa, Malin, Yoshi and Kuskov—backward made out the other archaeologists and diggers. Javar stood an arm's length away.

Connected by sight, all stood for a moment as if by mutual consent, unspeaking, listening, waiting. Dust dripped from overhead. A crack in the wall at Yoshi's back expelled a chunk of rock, making her squeak. Then silence—complete, except for their breathing.

"What now?" Quozel's voice was wispy, trembling.

"Are we sealed in?" asked one of the archaeologists. She began to creep forward along the corridor.

"Air!" said Yoshi, and Parsa echoed her in Tson. "I feel air. The passage is still open."

"The question is," said Javar, "how long will it be open? Do we attempt to get out or do we wait?"

Rhys batted debris from his hair and sloughed dust from his kilt. "Yoshi, can you raise Danetta?"

She fumbled with the comlink for a moment. "Sorry, sir. Either we're still too deep or . . . or it's gotten damaged. I think I might have fallen on it." A small piece of something fell from the little machine, glittering indistinctly in the disk-light before it hit the cave floor with a muffled ping. "Oh," Yoshi said. "Sorry, sir."

"Not your fault, Yoshi. Well. We seem to have a dilemma. Someone obviously wants to seal our fate. If we try to walk out of here—"

"Ambush," said Malin in English,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

peering up the corridor. "A catch-22."

Kuskov made a noise that might have been surprise or laughter. "Precisely, friend." He glanced back at Rhys. "I'd like to suggest that I go out. They're less likely to shoot me."

Over Yoshi's murmured translation, Rhys heard Malin say, "I understood what Searcher Kuskov said." He put his hand on the scientist's dusty shoulder, peered into his face and said in clear English, "A big chance, friend. Too big."

"I'll go," said Troy from the back of the group.

All eyes focused on him. He shifted and a rain of pebbles fell from his clothes. "They know me. I'll go out and-and see if I can't stall them. Talk them out of . . ." He made an uneasy gesture.

Rhys hesitated, unsure if he should trust the other man's conversion. Really, what choice did they have? He glanced at Javar, sensed consent, and nodded. "All right. We'll wait here. *You* call to us; we'll come out."

Troy nodded, set his shoulders and started toward the cave entrance, stepping carefully over debris. At the turn that would take him out of sight, he hesitated. Then, with a glance over his shoulder, he disappeared around the bend. They heard him begin to run.

"We could go back to the Shrine," suggested Kuskov. "It might be safer . . . just in case."

Just in case. Just in case Troy was more firmly in Beneton's grasp than they'd thought. Rhys hesitated over the decision. In a moment it was taken out of his hands. The whine of laser weapons echoed down the corridor and the ground shook beneath their feet and trembled above their heads. There was a shout, the sound of rockfall and someone scrambling madly down from the entrance.

A second later, Troy appeared, his face frozen in abject terror, a blossom of blood blooming over one eye. "They're firing!" he shrieked. "They'll kill us!"

Beneath Pa-Lili's fetish bag, Rhys's heart spasmed. "Back, everybody! Back to the Shrine!"

There was no hesitation. None. In seconds they had cleared the nether mouth of the tunnel, broken into the glorious chamber, and scurried to take cover behind anything that offered it.

And none too soon. Rhys could see the advance of light down the tunnel walls, marked its slow crawl along the uneven floor. He crouched behind an alabaster seat, holding his breath, biting his lip, and crossing his fingers. His mind struggled against scenarios of destruction, fought the idea that this wonderful place would disappear in minutes, torn apart by greed and fear.

Light washed out of the tunnel and was absorbed by the blaze from the Shrine. Shadows followed, becoming solid shapes—becoming, at last, men. They advanced into the soaring vault, their feet stage-whispering on the floors, their weapons gleaming as they fanned out beneath the crystalline lights. They lifted their faces to the alabaster thrones and the walls overflowing with knowledge, and Rhys nearly wept.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The leader of them opened his mouth on a long sigh. "Jesus-Buddha-Moses," said Admiral Sanchez. "We're not in Kansas anymore."

Danetta stared at the output from Rhys's EEG Array and wished she could decipher the riot of messages. Nothing had come from the mountain since Admiral Sanchez's hair-raising, "Damn! They're blasting the cave! We're going in!"

Dusk was coming hard and Danetta was amazed at how inimical the increasing darkness seemed. What was it your parents always told you—it's just the same as it was in daylight? At least, she told herself, the streets were quiet now. A terse message had accomplished that—a message played in and over every medium at Joseph Bekwe's disposal: We are not under attack. Return to your homes. We are not under attack.

It hadn't been believed immediately or universally. But as time passed and no more ghost ships haunted the outskirts of town, and the commercial vessels, left cooling their fantails at Shift Stations, began to arrive at the spaceport and request to offload goods, people had disappeared with their signs and their makeshift weapons and their anxious eyes—relieved, disgruntled, wary, jubilant.

Danetta patted her thigh with anxious rhythm. "Why don't they contact us? It's been hours."

"Try not to worry, Danetta. It's probably our Karma. We've given Sanchez a few grey hairs, he's probably just returning the favor."

"But that message, Joseph—they're blasting the cave—what if there was a cave-in? What if—"

The door of the old lab sucked itself into the wall and allowed an explosion of bodies to erupt into the room. Rhys was at the head of the colorful crowd which was bracketed by a drabber set of armed ColSec soldiers and colonials.

Danetta whirled. "Rhys! Yoshi! Thank God! Are you all right?"

"Aye!" He held up the holo-wafer and motioned for Brasn to bring forth the sense-globe. "It's all here in media both human and Tsong Zee can understand. The White Shrine is a real place and it proves, indisputably, that the Tsong Zee have a claim to Velvet—excuse me—to Tson."

Joseph Bekwe glanced at Sanchez, who stood at the rear of the group, ursine face expressionless. "And... do they... are they willing to negotiate regarding a human presence on the planet?"

Catching Yoshi's swift translation, Brasn canted his head, then nodded for the sake of the humans present. "These humans in our company—this Speaker Rhys, this Apprentice Yoshi, this Searcher Kuskov, this War Leader Sanchez, indeed, even this Digger Troy—proved to us, heroically, that humans are not so unlike Tsong Zee as we first assumed. In our Shrine we found some startling evidence that we have been destined to share Tson with another race of men—an OROM. It seems the Tsadrat Kalkt saw what we were incapable of imagining. That another race of Tsong Zee might exist, and that they, too, might

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

have a claim upon this world. We are regretful and ashamed that we did not realize this sooner and we hope we may be forgiven for the narrowness of our vision. We are more than willing to negotiate. Yes, we are *pleased* to negotiate your presence on our world." He made a gesture that was clearly meant to include everyone in the room.

Joseph Bekwe expelled a pent-up breath. "We are also pleased, Speaker Brasn," he said in perfect Tsuru. "And are also regretful of the actions of some of our people. We hope we may be forgiven for that."

Brasn canted deeply.

"What happened?" asked Danetta. "What happened up on the mountain?"

Rhys suspected the question was aimed more at the change in Tsong Zee sentiment than at any physical vicissitudes they'd undergone, but Sanchez beat him to the answer. "A couple of BeneCon vice-presidents and a small squad of terrorists laid siege to the Shrine," he said, surfacing from the group near the door. "They got off a couple of shots with the anti-armor laser before we could get to them. Brought down a lot of debris inside the cavern. Fortunately, the damage was minimal. They didn't put up much of a fight when they saw the uniforms. Only one or two of them even bothered to fire on us." He allowed himself a wry grin. "Said they were just protecting their corporate interests. Now we're protecting them . . . in the lockup at Admin."

Sanchez cracked his knuckles resoundingly and folded meaty hands at his belt clasp. "Governor, if you will provide transportation back to Admin. for this group, I will provide a guard detail. I believe we need to begin at the beginning and work our way toward a neat and seemly ending. In the words of an old song, I am bemused, bothered, and bewildered." He glanced up at Rhys. "Your sense-globe, sir. I would like to further experience the object of your endeavors."

Rhys let out a long, relieved breath and surrendered the globe. "Aye, sir. At once, sir. And I don't think you'll be disappointed."

Well, Sanchez, he thought as he watched the Admiral handle the artifact, broad face transfixed in fascination, *you're not such a bad sort, after all. And I'd've known that much sooner, could we but have traded places for a moment.*

"Pardon, Speaker Rhys,"—Javar touched his shoulder—"but should not War Leader Sanchez be suitably equipped for negotiation?" He indicated the EC "jewel" which still decorated his forehead.

Rhys smiled and canted. "I believe you have something there, my friend." His gaze swung to Sanchez's bemused, bearded face, so intent on the shimmering thing in his hands. "I'll just go and propose the idea to him." He clapped the Tsong Zee on the shoulder and signed him a "thumbs up."

"What does this mean?" Javar asked, echoing the gesture.

"Toward greater understanding." He looked at his thumb. "Eh, well. It also means, 'Wish me luck.'" ■

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

THE REFERENCE LIBRARY Tom Easton

A Season for Slaughter, David Gerrold, Bantam, $5.99, 576 pp. (ISBN:0-553-28976-4)
Aestival Tide, Elizabeth Hand, Bantam, $5.50, 401 pp. (ISBN:0-553-29542-X).
Purgatory, Mike Resnick, TOR, $18.95, 320 pp. (ISBN:0-312-85275-4).
Fools, Pat Cadigan, Bantam, $5.99, 299 pp. (ISBN:0-553-29512-8).
Nightside the Long Sun, Gene Wolfe, TOR, $21.95, 333 pp. (ISBN:0-312 85207-X).
The Work of Brian W. Aldiss, Margaret Aldiss, Borgo Press (P. O. Box 2845, San Bernardino, CA 92406), $39 hb (ISBN:0-89370-388-5), $29 pb (ISBN:0-89370-488-1). 360 pp.

With **A Season for Slaughter**, David Gerrold's *War Against the Chtorr* series reaches its fourth volume in better shape than one might have expected after struggling through its too-didactic predecessor. The first three—*A Matter for Men*, *A Day for Damnation*, and *A Rage for Revenge*—described the invasion of Earth by an alien and voracious ecology (they are being reprinted to accompany *Season* to the stands). The flavor of the series includes a very Heinleinian concern with individual competence and responsibility. But this is played out against the deaths of billions, the destruction—or transformation—of ecosystems, the revelation of interconnections between all the parts of the living environment, and the growth of a grudging acceptance that maybe humanity must find a way to get along with the alien system—and by extension to get along with its own environment.

As before, the hero is Lieutenant James McCarthy. When the series began, he was just a kid, an adolescent drafted into the war against the Chtorr. He proved to have a talent for picking up appropriate knowledge and surviving disasters. He aged and learned, and in the third volume he

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

encountered the human potential movement, most potently in the form of The Mode Training, a program supposed to free one of hidden constraints, to make one able to function in full consciousness of what one is doing. Now he is an abrasive, belligerent, bullying asshole who rides roughshod over those who get in his way. He does it in the name of competence, but the fact remains: He's an asshole.

In other words, there's nothing in human potential training or competence that necessarily makes you a nice guy. And in due time, the people around McCarthy conspire to smack him up side the head and tell him what a schmuck he is. Straighten out, fellow. Or you lose everything, most certainly including General Lizard, the woman you love more than life itself.

The series moves from ignorance toward understanding. For McCarthy, this means he's growing up, learning how to be a decent human being. For humanity, it amounts to the same thing. The alien enemy is an ecology, an interconnected system that subverts and resists control and makes people aware of environment as a vulnerable essential for survival in a way that nothing else ever has before. And here, of course, is a major part of Gerrold's point. In fact, he says quite explicitly, "This infestation might yet prove to be one of the very best things that's ever happened to the human race. It's forcing us to care about our goals on such a grand scale that for the first time, *millions* of people are actually thinking about our ecology, our planet, our ultimate goals. . . . We'll never be able to be complacent again. [We] are going to have to live our lives as if they really do matter."

The insights he offers as he unveils the latest developments in the Chtorran invasion and lets McCarthy realize that the great worms, which may or may not be truly sentient, sing. Indeed, their apparent intelligence increases with their numbers rather as if their song conveys thought. The insight is that there is no such thing as a single Chtorran. They are a mass mind, a hive, their own song. And that leads to the thought that there is also no such thing as a single monkey (read: human). We too exist as a mass, unified into consensus by language, and just as conflicting messages can disrupt human behaviors, so too can they disrupt the worms. In fact, the tactic may offer a grand way to attack the aliens.

If that is where Gerrold plans to take us, we must wait for the next volume (*A Method for Madness*; there will be at least one more after that), for which I now have much higher expectations than I did for this one after *A Rage for Revenge*. Gerrold has left his most blatant preaching behind in favor of a degree of action and conflict—both interspecies and interpersonal—that is far more likely to engage the reader.

Some readers will find an extra attraction in the book. Gerrold offers "special thanks" to a long list of people, saying, "For their generous donations to the AIDS Project of Los Angeles, characters in this book have

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

been named after these people or individuals of their choice. . . ."

Elizabeth Hand's first novel, *Winterlong*, earned great praise for its rich and potent depiction of a perversely nasty world in which the technology of war and torment has left the world a wasteland swept by mutagenic viral rains, populated by geneslaves and victims and decadent sybarites, our own civilization naught but ruins. There were flavors of Lovecraft and Wolfe, and a nod to Stephen King in her naming of the three past holocausts as the First, Second, and Third Shinings.

All of that is there in the sequel, **Aestival Tide**. The scene is Araboth, a great city on what was once the Texas coast, a ziggurat, an arcology of many levels named for the tiers of heaven—the Seraphim on highest, Cherubim below, then Thrones, Dominations, Virtues, Powers, Principalities, Archangels, and Angels—all set beneath the Quincunx Domes. Araboth is ruled by the Orsinate, three sisters of a life-extended clan given to sadism, willfulness, and indulgence. Its people imitate the lifestyles of the rich and famous and struggle to climb close to the margravines even though attracting their attention can be fatal.

The city was built centuries before as a shelter from the hell the outside was becoming. The safety within is celebrated each decade in the Feast of Fear, when Araboth's huge gate is opened upon the beach and the populace is winnowed by a geneslave monster, the Compassionate Redeemer, by sacrifices, and by terror. The terror is made more piquant by the festival's timing on the verge of the storm season and the legendary prophecy that one day the great storm Ucalegon will destroy the city.

Hand begins her tale with a hint that the city's foundations are rotten. The end, perhaps, is not far off. She then shows us the rancid life of Araboth. Here are commoners struggling to climb in its society, aspiring to a corruption as grand as that at the top. Here is Tast'annin, the Aviator who died at the end of *Winterlong*, restored to a kind of life by the margravine whose lover he once had been. Here are monstrous geneslaves. Here is a hidden room in the mud beneath the city, where an exiled Orsina brother, Nasrani, has accumulated ancient automata, including a womanly robot, Nefertity, designed as a fount of wisdom; alas, he cannot wake her. Here is an adolescent boy, Hobi, who will wake the robot later with a kiss. Here is Reive, a hermaphrodite who brings far too much frankness to her social role of dream interpreter.

The Feast of Fear approaches. The city trembles. The weakness at its foundation grows. Tast'annin slaughters his ex-lover. Reive and another are blamed. Nefertity leads Hobi from the city. Tast'annin and Nasrani follow. The gates open. Reive is sent forth for the Compassionate Redeemer's fond attentions. Ucalegon draws nigh.

Once again at the end, Hand bids her readers to lift up their eyes unto the light. This time she is more successful. There is a message of hope and promise that the reader expects

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to see fulfilled in still another volume.

On the other hand, for all Hand's redoubtable skill, her tone—at least for the purposes of this series—remains perverse, putrescent, and supremely cynical. If that is not to your taste, well... Her third novel, *The Eve of Saint Nynex*, is scheduled for 1993, and she is working on a supernatural novel, *Waking the Moon*, to follow that. Somehow I doubt that she will ever write frothy humor or mindless adventure.

When Mike Resnick's *Paradise* appeared, it struck many people as a marvelous idea. He had translated into SF terms the history of an Earthly nation, Kenya, that has been victimized by adventurers and exploiters and pushed headlong into political, economic, population, and environmental crises. He had, in effect, reversed the basic question of "alternate history" SF, from "What sort of story could I write if I supposed that some historical event had turned out different?" to "What sort of story could I write if I kept the history the same and changed the setting?" Not that others had not done similar things—where did you suppose all those interstellar wars and intrigues came from?—but he did it in a new way. Indeed, he seemed to be using the SF approach to comment upon the history and the people involved, to hold up a magnifying lens to history and tell us all to see ourselves clearly, and to learn.

Not surprisingly, when this "allegorization of history" worked so well, Mike was tempted to do it again. Since he is deeply fascinated by Africa, at least partly because it abounds in cases of human idiocy, he chose Zimbabwe for his focus. The result is **Purgatory**, and is patent Resnick. It has his distinctive voice. It has his echoes of Africa. It has his didactic cynicism. And it's convincing. But...

The tale begins when a native chieftain, Jalanopi, sits beneath his tree and decides that he should be smart enough to exploit the early exploiters of his world. His people are reptilian, and humans call them "snakes"; the parallel to a derogatory epithet in English is no accident. His adviser is a missionary. His aim is to gain the guns to make himself a local emperor. Unfortunately, the humans have much more experience in such dealings. It is not long at all before the world of Karimon is thoroughly infested by human farmers and miners. The natives are servants, serfs, peons, not much better than slave labor for their "betters." Jalanopi is gone, leaving his tree as the only character that is present until the book's last page.

And so the tale develops, through repression, oppression, rebellion, terrorism, war, the flight of the whites—oops, I mean humans, of course—and finally the victory of the natives. And then Mike makes his point, that the alien exploiters may be nasty SOBs, but they have the money, skills, and contacts to make a world (or a nation) prosper. The righteously victorious natives do not, and if they do not realize that, they might as well cut their own throats and be done with it.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

I read this one the week of the senseless Rodney King verdict, when our own "snakes" rioted in Los Angeles, looting and burning the very resources they needed to survive in their community. The parallel felt eerie.

But . . . I said that earlier, didn't I? I praise the book. I say nice things about it. And then that "But . . ."

The problem is that *Purgatory* struck me as more obvious than *Paradise*, even as a *Paradise* rerun. This may be no more than a function of sequence—if *Purgatory* had come first, I might now be saying the same thing about *Paradise*—but I think there's more to it than that. Lacking a single sentient character for continuity, the book feels much more like a history text or political tract. The reason may be that, as Resnick told me in a letter, he loves Kenya more than any other part of Africa, and writing its story was an act of love. His approach to Zimbabwe has to be less passionately engaged.

Pat Cadigan's first novel, *Mindplayers*, introduced us to a world in which all the subroutines of mind—neuroses, psychoses, talents, schticks, and even personalities—were for sale just as if they were games for your desktop PC. Naturally, the new technology spawned both an underworld and a regulatory agency, the Brain Police. Among other things, the former brainsucked the famous and those who showed signs of future fame, leaving empty husks that had to be raised from mental infancy all over again. It then parcelled ("parted") out the victim's mental bits and pieces to those who thought fame could rub off, or who craved a memory of fame and accomplishment. The Brain Police, of course, strove to stop it all.

How do the Brain Police work? When you open **Fools**, you find Davy Jones' Locker, a high-class night-club where holographic fish swim among the guests. Your point of view is a very confused young woman who thinks she is an actress who has franchised her personality. Unfortunately, people don't seem to recognize her in quite the right way. They feel sorry for her. Eventually they throw her out of the place. And when she finally sees her image in a mirror, she isn't who she thinks she is.

Eventually Cadigan's several parallel streams of fictive consciousness converge. The reader learns that Cadigan's heroine, Marceline, is a memory junkie (she gets off on other people's memories, not her own) in hock to a racketeer who runs an escort service. Escorts help people commit suicide; they're illegal because they often have to give their customers a final push. And when the job is done, they bring the customer's memories home for sale to memory junkies everywhere. Marceline's last job was to help an actress, Marva, get rid of an unwanted subsidiary personality. Much to her surprise, the actress turned out to be the subsidiary, constructed to shield a Brain Police agent in deep, deep cover. And now Marceline is carrying both the actress and the cop. It's no wonder she's confused. Nor is it any wonder that the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

reader also feels a bit whirly.

The first half of *Fools* ends with a very abrupt transition from Marcy-on-the-train-tracks to hunky-dory time. One gets the feeling that Cadigan didn't know how to write Marceline out of the bind she was in, so she just waved the authorial magic wand ($19.95 from the special effects division of the Science Fiction and Fantasy Writers of America) and skipped that little problem. The second half of the book is quite another story, centering on Mersine the Brain Cop (still in and now dominating Marceline's body) and her efforts to retrieve a brainsuck victim. She has a chance, for the victim is none other than Marva's director, Sovay, with whom she once enjoyed a torrid affair via a mind-to-mind link. He is now holding himself together in his electronic storage tank while spinning off subsidiary personalities programmed, to call home and holler, "Help!" If she can gather together enough of the pieces, the whole can be reconstructed. In fact, it turns out, she really only needs one or two of the pieces, for personality is holographic. The whole is present in every fragment, though it may be a bit blurred, and if the whole is strong enough it can regrow from the fragment.

Do you get a clue where Cadigan is going? The people of her world are consuming personality fragments like popcorn. Some of those fragments are from Brain Cops, some from racketeers, some from ordinary people. What Mersine/Marva/Marceline discovers as her search for Sovay activates all three of her personas suggests that people will soon be "catching" each other, developing extreme cases of multiple-personality psychosis, blenderizing, homogenizing. Of more immediate concern is the spread of deep-cover Brain Police agents. Everyone is rapidly becoming a secret agent; say the magic word, and they will spill the beans on anyone.

Cadigan is allegorizing a variety of real-world phenomena—media addicts, groupies, police states, and more—in a very interesting way. Her renditions of Mersine/Marva/Marceline's mental states are spectacular enough to qualify much of *Fools* for the "tour de force" label. Yet that isn't enough. Her very success at depicting mental polyphony—which I do admire—renders her book confusing and unconvincing. And her occasional need for that magic wand doesn't help much.

Remember Gene Wolfe's *Book of the New Sun*? That multi-volume tapestry of a bizarre and distant future made a tremendous splash. It also seemed to exhaust the author's SF engine, for his next few books were fan-

BE A GOOD
NEIGHBOR
Volunteer.
American Heart Association

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

tasy, and some were fairly light. But the engine's going again now, and the first chug looks very promising.

It's **Nightside the Long Sun**, the first volume of a new series called "Starcrosser's Planetfall." Volume 2, *Lake of the Long Sun*, and later volumes will be spaced about six months apart.

The setting is the Whorl, the interior surface of a vast cylindrical starship. Illumination comes from a "long sun" that extends the axis of the cylinder; night is a matter of a shade blocking the light, leaving the other side of the cylinder visible. Yet this is never made quite explicit. The point of view is that of Patera Silk, an augur or priest in the city of Viron. The technological level of the city is roughly medieval, but there are signs of a higher past. The dead are taken to Mainframe. There are TV-like screens for communication, attended by artificially intelligent Monitors. There are larger screens, the Sacred Windows, in which the gods have been known to appear. There are weapons such as azoths or blasters. And all these gizmos are old, unrepairable, unreplaceable.

To Silk comes a vision of the Outsider, a god other than the nine who rule the Whorl. He has a mission he does not—cannot—understand. If he believes that mission is nothing more than to save the manteion, the school and temple over which he presides with the aid of a trio of ancient chem people (apparently androids), from its purchase by a racketeer, well, perhaps it's all part of the Outsider's plan.

How can Silk save his manteion from Blood? The only thing he knows to try is to climb the wall of Blood's estate and hope to rob him of the deed. And of course he is caught, though he gets much farther than anyone in his or her right mind would expect. Fortunately, Blood is amused. Silk is released with a pair of assignments, to steal the price of his manteion from Blood's rivals and to exorcise a ghost from Blood's brothel.

As Silk embarks on his life of crime ("nightside" is the Whorl's equivalent of our "underworld"), he makes a number of unlikely friends. He also displays the soul of an innocent who can hardly take a wrong step, of a devout man who honors his gods no matter what and a fatalist who believes that no matter what happens to him must represent his gods' wills.

Nightside is the setup volume. Later books in the series should move Silk through a series of adventures that in due time tell him what the gods and the Whorl really are. The culmination must be the landfall of the series title. And if that sounds like quite a classic pattern, be assured that Wolfe is a master of style and texture. His version of that classic is as astonishingly fresh and convincing as the first version you ever read.

The latest of Borgo Press's "Annotated Bibliography & Guide" volumes is **The Work of Brian W. Aldiss**, prepared by his wife, Margaret Aldiss. It covers 100 books, 300 short stories, and nonfiction and poetry, listing publication dates, translations, reprints, and more. It does not neglect to list reviews of Aldiss's works, or to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

excerpt the critics' remarks. In addition, there is a brief introduction by David Wingrove and two essays by Aldiss himself, one autobiographical and one—original here—reflective.

The casual reader will find the essays both interesting and illuminating but will surely not think they justify the price of this exhaustively detailed book. Collectors, Aldiss fans, scholars, and libraries, on the other hand, should find the book quite essential. ■

IN TIMES TO COME

Next month we offer three novelettes by writers spanning the whole range of experience. The lead piece, "Sunshine, Genius, and Rust," is by Jeffery D. Kooistra, who just made his debut here last year and received a good many approving comments from you, the readers. It introduces a couple of memorable characters in a future of sweeping problems including a war they would rather not enter, some very alien and decidedly menacing aliens, and mind-stretchingly original ideas about how science might grow. Sometimes people forget that it does, thinking of it as a finished product and restricting their speculations to variations on well-established themes. But science is still subject to really fundamental breakthroughs, as fraught with problems and opportunities as the revolutions triggered by relativity and quantum mechanics!

At the other end of the spectrum we have a new Reginald Rivers tale by L. Sprague de Camp, who was a prominent practitioner of this field before many of us were born and is still going strong. Maya Kaathryn Bohnhoff is in between: she's been writing just enough years to have lost her newcomer status, but is still much too young to qualify as an oldtimer. Her May novelette, "A Tear in the Mind's Eye," is a haunting story of conflicts within minds, a complete contrast in setting, theme, and tone from her serial in this issue, but as memorable as anything she's done.

We'll also have several short stories, including a strikingly original variation on a perennial theme by Stephen L. Burns, and Dr. J. Kevin Steele's factual report on a very timely line of research: "Is AIDS an Autoimmune Disease?"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BRASS TACKS

Dr. Schmidt:

On behalf of all so-called handicapped individuals I want to publicly thank Michael F. Flynn for his intelligent, insightful "Captive Dreams" (August '92). As a parent of a twenty-three-year-old autistic son, I especially appreciate and identify with this story.

Unfortunately, I have met many "Almas" during my efforts on behalf of my child. They generally fall into two groups: one is unable or unwilling to speak out against the "experts" and accepts at face value everything dictated to them about their child's capabilities. The other is overly protective to the point of detriment to their child, whether from guilt or a personal need for codependence under the guise of love. Both groups tend to ignore current technologies or mistrust what they could mean to the futures of their children.

Like many others, I fit neither group and became an active advocate for our son. My husband and I resisted from the beginning the retarded label because we knew there was a fine, highly verbal intelligence there. Our son's brain merely processes in an erratic, unpredictable manner. While I was never popular with the staff of my son's schools, he did receive more and better attention due to my efforts. And we are lucky in that my husband has remained right here with us during the sometimes hellish years.

Mr. Flynn's timely story serves to illustrate a current controversy involving a treatment method for nonverbal autistics. Facilitated Communication, whereby a therapist lightly supports the elbow of a student who then types on a PC keyboard or an electronic typewriter, has been hailed as a godsend by some and a carnival trick by others. Many parents are resistant to their children participating in a "side show" that could make them objects of ridicule. I often wonder if it is not the parents themselves who fear learning just what is going on in the minds of their otherworldly offspring.

Thank you again, Mr. Flynn, for a much-needed light on the otherwise dark area of education for all the Ethans out there, no matter what label they bear.

BARBARA L. CARROLL

Arvada, CO

Dear Stan:

As a regular reader of *Analog* for over 25 years, I have come to expect a certain flavor or orientation to your stories. They frequently amuse, often

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

intrigue, and occasionally anger or irritate, but they rarely if ever depress. The August 1992 issue was a notable exception, and one which I found disturbing if it is indicative of a trend. While the technical orientation of the stories was interesting and the issues they raised were good ones, in the end they were not particularly happy or uplifting.

Running through the list briefly, they dealt with 1) a dysfunctional mother who was more concerned with her own need to mother than her child's welfare; 2) an alien visit which would not be repeated for 5,000 years due to Pleistocene extinction of the mammoth; 3) the life of a human clone without legal rights and the indignities he suffered as a result (yes, I'll grant you this one had an uplifting ending); 4) the need of some to sacrifice for the greater good by entering into a sluglike symbiosis with alien lifeforms; 5) the extrapolated rate of change of the human genotype (I *liked* that one!); 6) the emptiness of the modern work ethic; and 7) suicide as a political statement in the context of racial prejudice, with a dash of ecological degradation thrown in. Even the "Probability Zero" was depressing!

I hope this was an aberration. I read *Analog* (and not your competitors) not only because I like the hard science, the thought-provoking articles, editorial, and stories, but also because I like the upbeat, we-can-solve-this nature of the magazine. I would hate to see that go.

BRYAN R. SHELBY

Madison, NJ

P.S. I greatly prefer the two-column to the one-column page layout.

I'm sorry you found the issue depressing. Please regard it as a statistical extreme rather than a trend: we, too, like what you aptly describe as the "upbeat, we-can-solve-this nature of the magazine," and have no intention of abandoning it. However, not all stories lend themselves to equally upbeat treatment (in fact, a really steady diet of it might grow tedious), and it just happened that some of the more disturbing ones came together in this issue. If it's any consolation, the inventory currently contains more than the average number of humorous stories, as well as some quite uplifting ones.

Nor do we have any plans to go to a one-column format as a general thing. "Captive Dreams" was set that way solely to accommodate the passage at the top of p. 28, where five columns had to be set side by side. It seemed less confusing to work that into a single-column text than it would have been in the usual two columns.

Dear Dr. Schmidt:

I read with interest and envy Vincent Di Fate's description of his trip to view the launch of the shuttle *Atlantis* in your August, '92 issue. In it, though, I found one section which troubled me sufficiently to write.

Towards the end of the article it was noted that NASA's chief of Public Affairs, Bob Schulman, lamented that the public was apparently becoming less interested in the space program;

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and that his office had issued a booklet describing how the program had changed the lives of practically everyone living.

NASA issued a booklet? When? To whom? How do I get a copy? What does it cost? Whom do I write to?

While I would love to see the space program expanded back to its 1960s' levels, about all anyone hears of it these days are its screw-ups: Hubble's mirrors, the *Challenger* disaster, $7 million satellite-capture arms that don't work, and the like. In response, NASA publishes a booklet which nobody hears about and which we'll probably have to purchase ourselves. Presuming we can find out where to send our money.

NASA exists at the public trough, along with other programs involving the military, social-consciousness, education, etc. These groups make it their business to ensure that the public has it very much on their mind that "their" program must be funded, and why. Yet NASA has no such mouthpieces.

If Bob Schulman were to truly earn his paycheck then he'd make certain that this booklet was not only available at every public school and library in the country, but that its contents were periodically presented —and updated—on all the various evening news programs.

Sure, it's easy for me to say this. But I'm not getting paid to be NASA's public mouthpiece—Bob Schulman is. Theoretically, though, it shouldn't be too difficult to compile and make known such things as:

—How many dollars are returned to the economy for every dollar spent on space? Ultimately, space is an investment, not a bottomless pit. What are we getting back from it, and in comparison to other publically-funded programs?

—How many jobs are created, directly and indirectly, by NASA programs?

—Just what percentage of the budget is NASA's, versus other "worthier" causes? Put emphasis on just how small a percentage it is versus how much of a payback, dollar for dollar, NASA's activities return to the national economy.

—What might the space station be good for? For example, if you could show that an AIDS or cancer vaccine could be created profitably up there, I'll bet the station's funding would be increased manyfold, and quickly to boot. Don't talk about solving esoterical questions such as the age or origin of the Universe. This taxpayer couldn't care less. I do care about what's in it for me and my country, though, and in hard and measurable terms—like health and technology spinoffs, national prestige, return on dollar investment, enhanced national security, etc. Answer the other stuff as a sidelight if you like, but not as the primary reason for doing it.

In other words, show me how NASA's activities are relevant to me. Tell me! Don't expect me to look under rocks to get the answer. Face it, NASA's competition for public funds don't make me do that. Find people like Vincent Di Fate who can relate to the benefits of NASA activities and parade those folks before Congress,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to balance out the nay-sayers. Both Congress and the taxpaying public *need* to hear this stuff.

Or try a parallel tack: Fire my imagination! Go to Mars to investigate the "face and buildings" out there. See what minerals are available in the asteroid belt and how we can use them. But always, always keep the angle of relevance present. You lose that and you've lost my interest.

To Bob Schulman: Take it from someone who's on NASA's side: Whatever it is you're doing, it ain't good enough.

Forgive me, Dr. Schmidt, for the length (and tone) of this letter. But it seems as though the old saw about NASA's doing the impossible (making space exploration boring) has been not only validated but made worse by people, such as Schulman, who cannot conceive how irrelevant many taxpayers feel the space program is. People in his position apparently haven't got a clue as to what their message should be, never mind how to get it across to the public.

In a high-tech age NASA is mired in a horse-and-buggy atmosphere of anonymous booklets while getting their backsides (and funding) kicked by other organizations who understand modern communications and how to get their own message across. And it's a damned shame.

JAMES HALL

141 Grande Road
East Hartford, CT 06118

The author/artist replies. . . .

Thank you for your letter regarding my article, "A Cape Canaveral Diary." Like you (and virtually every NASA employee I've ever spoken to), I too find NASA's inability to communicate its value to the public enormously frustrating. For the sake of clarification, however, I'd like to contribute the following.

First of all, you may already know that I incorrectly stated Bob Schulman's job title; he is not *the* chief, but *a* chief in the Bureau of Public Affairs for NASA, and is not ultimately responsible for establishing the agency's policies with respect to its public relations. As a matter of fact, Schulman has fought courageously for many years to preserve the art program through a succession of devastating budget cuts and is regarded by the art community as something of a hero. As much as the agency needs people like myself, as you suggest, so too does it need people on the inside who, like Schulman, are deeply devoted to keeping the public awareness of the agency's activities alive.

NASA, a government agency, is subject to enormous political pressures. Without the support of the administration, or of key members of Congress, NASA would simply disappear—and there really hasn't been a serious commitment to the agency since the Kennedy/Johnson years. When I've asked why the agency hasn't been more astute in its public relations over the years, I've usually encountered the same frustration expressed in your letter from those NASA employees whom you feel are not doing their jobs.

The fact is that NASA has always produced a veritable warehouse of press releases, booklets, and special

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

publications. Whether this information gets disseminated to the public or not is often subject to the news media. It's all too easy to blame the news media—and without a truly free press the American public has only limited means of keeping our government answerable for its actions—but many people in the news industry today simply don't think we'd be interested in what's going on in space. Back when we were fighting the Cold War and there was an enemy, real or imagined, to keep ahead of, there wasn't much of a problem in convincing the taxpaying public and Congress that space was a place which, for strategic reasons, needed to be explored and developed. May I suggest that you take a look at some of the books devoted to the history of space development in America. One that is especially lucid in the matter of NASA as a political entity is . . . *The Heavens and the Earth: A Political History of the Space Age*, by Walter A. McDougall (Basic Books, 1985).

I'm always wary when politicians blame the news media. I know that there are many decent people working in the news industry who do an earnest and thorough job of making information available to the public, but I also know that certain aspects of the news media are self-limiting and are less reliable than many Americans might think. About a dozen years ago I went on national tour to promote a book that I had illustrated and co-authored. Generally I could say pretty much what I wanted when interviewed by the press and was given a substantial amount of freedom to speak my mind on radio. For my television bookings, however, I seldom had more than two or three minutes of air time, was invariably edited by producers as to the content of my presentation, was instructed to avoid provocative or controversial subjects, and not to speak in depth or deal with issues too complicated for the viewing audience. As a result of this experience, it seemed to me that many of the people working in television did not have a particularly high regard for the viewing public. I find it especially distressing that most Americans seem to be getting the majority of their news from TV and, as such, are terribly ill-informed about what's really going on in the world.

The space telescope is a perfect demonstration of this problem. Much was made of its unique ability to provide new and valuable information about the cosmos. When it was launched and it was quickly discovered that there was an aberration in the Hubble's mirror, I think many Americans concluded that the telescope was just another costly failure and dismissed it. Yet almost every week since its initial deployment in 1990, there has been a news item about some startling new bit of information that has been transmitted back to Earth by the Hubble Telescope. Granted, much of what this sophisticated hardware has yielded is somewhat esoteric to those of us who lead ordinary, work-a-day lives—but these reports clearly demonstrate that the observatory is doing pretty much what it was designed to do. The

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

fact that the news media doesn't find this information to be "sexy" enough for feature material is simply a fact of life. If the news media determines that the NASA press releases aren't going to provide enough interest for them to hold a substantial part of the viewing audience, all the pamphlets in the world aren't going to change their minds. Granted, NASA could do a better job of self-promotion, but walk into a press room at a NASA facility and take just one copy of each of the handouts available there—I suspect you'd give yourself a hernia trying to lift your briefcase after you were done.

The fault lies not only with NASA and the news media, but also with our nation's leadership. Without the earnest commitment of the president and our nation's legislators, we seem to be going nowhere fast in space. War has always provided the impetus for technological advancement in this century—and fear of war kept space development alive during the Cold War. Now that the communist world has all but collapsed, it seems to me that the real peace dividend is that we no longer have to blow ourselves up in order to move ahead. Now, more than ever, we need leadership that can fire us up about who we are and how important it is that we move forward into that bright and wonderful future we SF fans so clearly see.

At any rate, Mr. Hall, you will be receiving NASA's spin-off publication directly within the next few weeks. The publication is updated annually and is distributed by NASA's Technology Transfer Office, P.O. Box 8757, Baltimore, MD 21240, or from the Government Printing Office, Washington, D.C. 20402. For budgetary reasons, they do not maintain a regular mailing list, so you'll need to write them once a year to receive the updates. It seems to me that this is a letter well worth writing.

VINCENT DI FATE

Dear Dr. Schmidt

I've been an avid *Analog* reader for several years now, always eagerly awaiting the arrival of my next issue in the mail box. I enjoy almost every story you run, and I don't worry much about the ones I don't like; it's unrealistic to expect to like all of 'em.

This letter, however, concerns another letter. I usually read your editorial and then Brass Tacks before starting the stories, and I followed that routine for the August '92 issue. The letter from Mr. Charles Montero stopped me cold.

I am a lesbian. And I can assure Mr. Montero that lesbianism is not a "sociological problem," but bigotry —like the homophobia and sexism Mr. Montero exhibited in his letter—is. I certainly hope, Dr. Schmidt, that such prejudices as Mr. Montero's do not sway you from the future printing of some story that truly presents gay or lesbian characters. *Glass Houses* hardly fits the bill. But a story with the same emotional intensity—shared equally by two characters of the same sex—that many of *Analog's* heterosexual characters have would be deeply appreciated.

And as for Mr. Montero, if one depiction of lesbianism stirs him to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

threaten to cancel his subscription, I wonder if he can imagine how I, and other gay men and lesbians who regularly read *Analog*, feel to have waited this long for that one depiction. We've read literally thousands of heterosexual characters in the pages of your magazine, and not once, speaking for myself, did it ever cross my mind to cancel because of that.

Thanks for your time, and keep these stories coming. I love 'em.

KC WILDMOON

Atlanta, GA

Dear Doctor Schmidt,

I'm pleased to be able to tell you that your visually-impaired relative need not wait for the advent of electronic books in order to continue to enjoy any sort of book or magazine he or she might care to read (August editorial). A device has been on the market for at least 20 years which visually-impaired persons have used to read all sorts of printed materials, including newspapers and magazines which are printed in very small type.

The device is called Visualtek reader, and it works more or less the same way as your electronic book. A camera photographs the printed letter, and that image is then magnified to whatever size the reader requires, which is then shown on a television screen.

Readers interested in learning more about these devices and where they can be purchased should write to: American Foundation for
the Blind Inc.,
15 W. 16 ST.
New York, N. Y. 10011
The Visualtek reading machine is not cheap, but it costs less than a not so good used car.

I look forward to reading your editorials for many years to come.

HARV ROBINSON

Inez, KY

Dear Dr. Schmidt:

I sent an enlarged copy of your August editorial, "Reader's Choice," on cyberbooks to a friend whose vision is impaired. He is a writer who collaborates with another writer. They both use Word Perfect and exchange disks. He has had trouble reading the screen, and asked for suggestions. When I saw an inexpensive WYSIWYG (what-you-see-is-what-you-get) word processor program for DOS, with scalable fonts*, I tried it, and found that I could work with, say, 16 point type, save the file as ASCII, and retrieve it in Word Perfect. The exchange can also go the other way.

In discussing this with another friend, who is a dedicated Apple and Macintosh aficionado, he gently pointed out that he has used WYSIWYG on the Macintosh for years. But for the many people with failing vision who have personal computers that use PC-DOS or MS-DOS, this could be an inexpensive answer.

I always enjoy your editorials, as I did those of Ben Bova and John Campbell, and, although they address a particularly well-informed, open-minded and thoughtful readership, I wish that they could reach a wider audience.

CLYDE MOYERS

Cape Canaveral, FL ■

*PFS: Write, Spinnaker Software Corp., street price $49.95. (Tiger Software, Coral Gables FL)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Classified Marketplace

AN APRIL '93

ANALOG/ASIMOV combination CLASSIFIED AD rate is $8.60 per word—pay able in advance—($129.00 minimum). Capitalized words 60¢ per word additional. To be included in the next issue please send order and remittance to Judy Dorman, DELL MAGAZINES, 380 Lexington Ave., New York, N.Y. 10168-0035.

ART AND DESIGN

FOR INFORMATION, REGARDING PRINTS, POSTERS, AND OTHER ITEMS FEATURING THE ARTWORK OF MICHAEL WHELEN, PLEASE CONTACT: GLASS ONION GRAPHICS, PO Box 88, Brookfield, CT 06804. Call or Fax: (203) 798-6063.

BOOKS & PERIODICALS

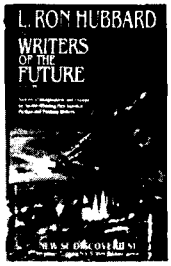
100,000 science fiction and mystery paperbacks, magazines, hardcovers. Free catalogs! Pandora's, Box Z-54, Neche, ND 58265.

FREE CATALOGS of Science Fiction pulps, digests, paperbacks, hardcovers. Collections also purchased. Bowman, Box 167, Carmel, IN 46032.

BUYING OLD ASTOUNDING and other magazines and books. Jake Bowan, Box 18183, Washington, DC 20036.

ESCAPE TO NEW WORLDS OF
IMAGINATION

"If you buy only one paperback in the SF field this year, make it this one." – MEMPHIS COMMERCIAL APPEAL



Let your imagination soar. Read the latest seventeen sparkling new stories from prize-winning writers in the acclaimed *L. Ron Hubbard Presents Writers of The Future®* series!

BUY IT WHEREVER FINE BOOKS ARE SOLD
$5.99 in paperback. To order direct, call
1-800-722-1733 (1-800-843-7389 in CA)

© 1992 BPI. All rights reserved. WRITERS OF THE FUTURE is a trademark owned by L. Ron Hubbard Library and is used with its permission.

CATALOGS AND DIRECTORIES

BEST selection of DRAGONS AVAILABLE! Sculptures, T-Shirts, Stationery, Rubber Stamps and Much More. Full color catalog $2.00. Dancing Dragon Designs, Dept. AN, 5670 West End Rd#4, Arcata, CA 95521.

COMPUTERS AND SOFTWARE

Got a computer? Got a modem? Call the Funhouse for FREE Software (804) 442-5867. Analog covers online!

PERSONAL

BEAUTIFUL BRITISH LADIES & ELIGIBLE BRITISH GENTLEMEN seek friendship, romance & marriage with American ladies & gentlemen! All ages! Free details: ENGLISH ROSE INTRODUCTION AGENCY. (Dept. D/P). 2nd Floor, Mill Lane House, Mill Lane, Margate, Kent. ENGLAND TEL: 01144-843-290735.

GAY CONTACTS! WRITE: MMM INC. P.O. BOX P (A), CONWAY, NEW HAMPSHIRE 03818.

TAPES & CASSETTES

OLDTIME RADIO PROGRAMS. Great Science Fiction! Also, mysteries, comedies, westerns. Free catalogue. Carl D. Froelich, Heritage Farm. New Freedom, Pennsylvania 17349.

In The Future...
YOUR
Classified/Display
AD
CAN BE
PLACED HERE
For details:
SF CLASSIFIED
380 Lexington Ave.
New York, NY 10017
(212) 856-6307

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

UPCOMING EVENTS Anthony Lewis

26-28 March

MIDSOUTHCON 12 (middle South SF conference) at Memphis Airport Hotel, Memphis, Tenn. Guest of Honor—Alan Dean Foster; Artist Guest—Carl Lundgren; Fan Guest —Wilson "Bob" Tucker. Registration —$25 until 1 March, $30 thereafter. Info: MidSouthCon 12, PO Box 22749, Memphis TN 38122.

2-4 April

COASTCON XVI (Gulf Coast SF conference) at Holiday Inn Express, Biloxi, Miss. SF Guest of Honor—Timothy Zahn; Fantasy Guest —Lawrence Watt-Evans; Gaming Guest—Michael Stackpole; Artist Guest—Keith Parkinson; TM—Andrew J. Offutt; Fan Guest—Mary Scott. Registration —$20 until 1 March, $25 at the door. Info: CoastCon XVI, PO Box 1423, Biloxi MS 39533-1423. (601) 864-6064.

8-11 April

HOUSTON'S FUTURE FEST at Hyatt Regency, Houston, Texas. SF Guests of Honor—Dr. Jerry Pournelle and George Alec Effinger; Gaming Guest —Michael Pondsmith; Comics Guest —Roland Mann; Activist Guest—Bjo Trimble; Horror Guest—Sidney Williams. Registration—$25 until 1 February, $35 at the door. Info: Future Fest, PO Box 1770, Friendswood TX 77546-1770. (800) 787-5317.

16-18 April

PHOENIXCON 8 (Atlanta area SF conference) at Sheraton Century Center Hotel, Atlanta, Ga. Guest of Honor—Lois McMaster Bujold; Artist Guest of Honor—Darryl Elliot; Special Guests—Allen Steele and Tom Deitz; TM—Thomas Fuller; Fan Guest of Honor—Ed Kramer. Registration—$20 until 17 January, $25 until 1 April, $30 thereafter. Info: Phoenixcon 8, PO Box 1513, Smyrna GA 30081-1513. (404) 578-8461.

2-6 September

CONFRANCISCO (51st World Science Fiction Convention) at Parc 55, ANA Hotels, Moskone Centre, San Francisco, Calif. Guest of Honor —Larry Niven; Artist Guest—Alicia Austin; Fan Guests—Tom Digby and jan howard finder; MC—Guy Gavriel Kay. Registration—$85 adult/$30 child until 30 September 1992; Supporting—$25. This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition—the works. Join now and get to nominate and vote for the Hugo Awards and the John W. Campbell Award for Best New Writer. Info: 712 Bancroft Rd, #1993, Walnut Creek CA 94598. (510) 945-1993. CompuServe 72377,3623.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

OVER 50% OFF DURING OUR FIRST ANTHOLOGY WAREHOUSE SALE!

Our warehouse is full -- full of classic science fiction anthologies from **Analog Science Fiction & Fact** and **Asimov's Science Fiction** magazines. We need to make room for new books -- that's why we're having our anthology warehouse sale. For only $17.95 plus $3.00 postage and handling, we will send you an assortment of 9 classic science fiction anthologies. That's less than $2.00 a book and less than half the original price.

Please send your check or money order for $20.95 (no COD's please) to:

Science Fiction Anthologies
P.O. Box 40
Vernon, NJ 07462

Please be sure to include your name and address.

While we cannot accommodate requests for specific anthologies, we guarantee that you will be delighted with your surprise assortment. Also, at this great price, these anthologies will make wonderful gifts for your science-fiction-loving friends.

MUNG-8

Allow 6-8 weeks for delivery. Available only in U.S.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

MAIL ★ ORDER ★ MALL

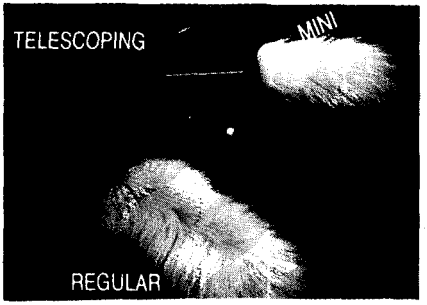
▼ EVERYTHING BAG

People on the go always have so much to carry around. The Everything Bag makes it a snap. This oversized shoulder bag is constructed of tough, water-resistant canvas material and features nine roomy pockets. Plus, an unusual zipper design enables the bag to expand to double its normal width—to a full eight inches. Adjustable 2" wide straps provides a real comfort feature. In 3 great colors. **$24.98** ($4.00) #A1955-Blue; #A1956-Khaki; #A1957-Gray.

TO ORDER: Send check with item number for total amounts, plus shipping & handling shown in ( ) payable to **MAIL ORDER MALL**, Dept.043 AN, P.O. Box 3006, Lakewood, N.J. 08701, or call TOLL FREE **1-800-365-8493**. NJ residents add 6% sales tax. We honor MasterCard/Visa. Sorry, no Canadian, foreign, or C.O.D. orders. Satisfaction Guaranteed. 30 day money back guarantee for exchange or refund. Allow 30 days for delivery.

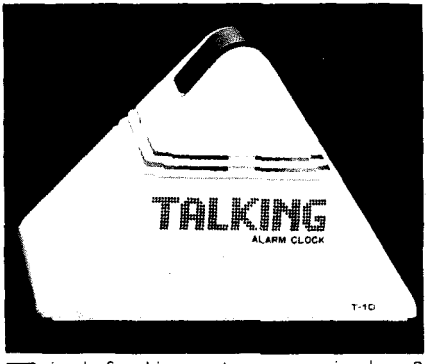
Magalog Marketing Group Inc. © 1990
1905 Swarthmore Ave., Lakewood, N.J. 08701

▼ LAMBSWOOL DUSTERS



Lambswool contains a natural static charge that makes dust literally leap off surfaces. Our dusters are imported from England. They are the fluffiest, highest quality lambswool in the world! We offer a set of four lambswool dusters: our 27" duster, our telescoping duster which extends to more than four feet—lets you reach high corners, top shelves, overhead lights and collapses to 28", and two mini dusters. **$22.98** ($4.00) #A1870.

▼ TALKING ALARM CLOCK



Tired of waking up to an annoying buzz? Why not awake to a crowing rooster and time report! Our battery operated talking alarm clock announces the hour and gives the time with the push of a button. Sleek design in white with LCD readout. Takes 4 "AA" batteries (not included). 5½"x 3"x4". **$27.98** ($4.50) #A1916.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED